



May 18, 2001

Ms. Carolyn Thompson
Remedial Project Manager
U.S. Environmental Protection Agency
61 Forsyth Street, SW 11th Floor
Atlanta, Georgia 30303

Subject: Reassessment Report (final)
Ashland Chemical Company
EPA ID No. GAD059558601
EPA Contract No. 68-S4-01-01 (STAT 4)
Task Order No. 0001

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EPA-REGION 4
ATLANTA, GA

Dear Ms. Thompson:

The T N & Associates, Inc. (TN&A) Superfund Technical Assessment Team (STAT) is submitting the revised cover page of the final reassessment report for the Ashland Chemical Company site in Columbus, Muscogee County, Georgia. The reassessment report, scoresheets, confidential pages, CERCLA Eligibility form, all references cited, and the original topographic maps have not changed and were submitted to EPA on February 7, 2001.

Please contact me at (678) 355-5550 or Brenda Shaw at (865) 220-9000 if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Matt Ellender', is written over a horizontal line.

Matt Ellender
STAT Project Manager

10086514



Enclosure

CC: Cindy Gurley, EPA Task Order Project Officer (w/o enclosure)
Jeff Napier, EPA Contracting Officer (w/o enclosure)
Stacy Hill, EPA Contract Specialist (w/o enclosure)

NFRAP
5/18/01

REASSESSMENT REPORT

**ASHLAND CHEMICAL COMPANY
COLUMBUS, MUSCOGEE COUNTY, GEORGIA**

U.S. EPA ID No. GAD059558601

Prepared for:

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
61 Forsyth Street
Atlanta, Georgia 30303**

Prepared by:

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Contract No.	:	68-S4-01-01
Task Order No.	:	0001
Date Submitted	:	May 18, 2001
EPA Task Monitor	:	Carolyn Thompson
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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has tasked the T N & Associates, Inc. (TN&A) Superfund Technical Assessment Team (STAT) to perform site reassessments under contract number 68-S4-01-01. Reassessments are conducted to evaluate a site's current Hazardous Ranking System (HRS) status, document what is contained within the site files, update target information, generate a new site score, and summarize all the information in a report submitted to EPA. This Reassessment Report has been prepared in accordance with the scope of work requirements of Task Order No. 0001, for the Ashland Chemical Company site (Ashland), EPA ID No. GAD059558601, located in Columbus, Muscogee County, Georgia. This Reassessment Report evaluates Ashland and provides a recommendation regarding further action.

2.0 SITE BACKGROUND

This section describes the site and its present and past operations (including waste disposal practices and regulatory history), the environmental setting and geology, previous investigations, and the source areas located at the facility.

2.1 SITE DESCRIPTION

The Ashland Chemical Company facility is located in a heavily industrialized area at 716 Sixth Street, approximately 1.5 miles south-southwest of the center of Columbus, Georgia (see Figure 1). The geographic coordinates of the facility are 32° 27' 6" north latitude and 84° 59' 5" west longitude (Ref. 1). The site is 300 by 300 feet, totaling approximately 2 acres (Ref. 2, p. 1). The major on-site feature is a building that measures approximately 100 by 200 feet, though it is unknown if this building was part of Ashland's operations (Ref. 3, p. 1). A 500-gallon underground storage tank, a 55-gallon drum storage area, and an acid neutralization pit were also located on site (Ref. 4, pp. 3, 9). It is not known if the site is fenced or paved.

2.1.1 Site History

According to the 1984 Preliminary Assessment (PA), Ashland Chemical Company began operations on this site in 1945 and had been in operation for 39 years at the time of the PA (Ref. 4, pp. 3, 9). Ashland



Figure 1. Topographic diagram of Ashland Chemical Company site.

no longer occupies this site. Little information was available regarding site operations, though Ashland's "Contingency Plan and Emergency Procedures" indicated that the facility operations involved reclaiming, recycling, and resale of organic solvents and inorganic acids (Ref. 5, pp. 2–4). Halogenated and non-halogenated solvents, inorganic acids, and inorganic corrosives were used on site in various processes and quantities throughout the years of operation. Hazardous wastes were manifested to off-site disposal. A 500-gallon underground storage tank was identified that acted as a backup "catch" facility for inadvertent product spillage and/or line flush due to loading/unloading and drumming operations of organic solvents. Customers brought spent organic solvents and inorganic corrosives for treatment in 55-gallon drums. Acid wastes were treated in an acid neutralization pit and discharged to the city sewer. Spent solvents were treated and shipped off site to a treatment/storage/disposal facility (Refs. 4, pp. 3, 4; 5, pp. 2–4). No further details about specific site operations are known.

Central of Georgia Railroad Company is the current owner of the site as well as two adjacent lots east and west of the site on which railroad spurs are located. Tax records show no changes of ownership over the past 10 years, and it is not known whether Ashland Chemical Company owned the site at one time or leased it from Central of Georgia (Ref. 2, p. 1). As of 1991, Ashland no longer maintained a business license at this location (Ref. 6, p. 1):

2.1.2 Regulatory History

Ashland applied for a Part A Resource Conservation and Recovery Act (RCRA) permit November 12, 1980 (Ref. 4, p. 3). The 500-gallon underground storage tank was closed in accordance with Georgia hazardous waste regulations during May–July 1983 (Ref. 4, pp. 3, 8). The drummed waste storage area was closed in 1984, and the RCRA permit application was withdrawn with the EPA ID number classified as inactive in September 1984 (Ref. 7, p. 1).

No listings were found in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database for the Ashland site, and it is not known when site discovery occurred (Ref. 8, p. 1). A PA was conducted by Georgia Environmental Protection Department (GA EPD) in March 1984 (Ref. 4, pp. 1–15). The PA documented waste information (waste codes) and estimated waste quantities. Ashland reported no spills or releases (Ref. 4, pp. 3, 8, 9). It is stated in the Envirofacts database that the Ashland facility does not have a Handler/Facility Classification in the current Resource Conservation and Recovery Information System (RCRIS) database (Ref. 9, p. 2).

No further assessments or investigations have been conducted, and the PA recommended “no further action” (Ref. 4, p. 8). Since Ashland no longer handles or generates hazardous waste, their RCRA permit has been withdrawn and the facility is no longer regulated under RCRA (Ref. 7, p. 1). A file review conducted in 1999 noted that a 1991 project note recommended “no further remedial action planned” (NFRAP) because no violations or spills had ever occurred at the site (Ref. 4, pp. 2, 15).

2.2 ENVIRONMENTAL SETTING AND GEOLOGY

The climate in Muscogee County is generally mild with a frost-free growing season of about 248 days a year. Weather records list the average annual temperature as 65°F. Summer temperatures generally climb above 90°F, while temperatures below 32°F occur about 42 times per year. January is the coldest month, averaging 47°F, and July is the warmest, averaging 82°F. High temperatures in the three summer months have each exceeded 100°F, with a record 104°F recorded in July (Ref. 10, pp. 1, 2). Rainfall averages approximately 50 inches per year. The mean annual lake evaporation in the area is 44 inches per year, yielding an annual net precipitation of 6 inches (Ref. 11, p. 63). The 2-year, 24-hour rainfall event for the area is approximately 4 inches (Ref. 12, p. 95).

The site and surrounding areas are relatively level. The Ashland facility is located at an elevation of 240 feet above mean sea level (msl). The elevation surrounding the area varies from a high of approximately 330 feet above msl, to low areas at 200 feet above msl. The Chattahoochee River's elevation is also at 200 feet above msl (Ref. 1).

The 2-acre facility is located in an industrial area on a lot that is bordered on the east and west by two spurs of the Central of Georgia Railroad Company, on the north by another industrial facility, and on the south by Sixth Street (Ref. 2, p. 1).

There are residential housing units within 0.25 miles of the site; however, the majority of residential populations are located within the 3–4 mile radius rings, which encompass Columbus, Georgia and Phenix City, Alabama. (Refs. 1; 13, pp. 1, 2; 27, p.1).

The nearest surface water is the Chattahoochee River, with the most downstream probable point of entry (PPE) located approximately 4,500 feet south of the site. Columbus crosses two watersheds (Ref. 15, p. 1). The 15-mile target distance limit (TDL) terminates in the Chattahoochee River approximately 1,200 feet upstream of Sewelson Creek (Ref. 1). The TDL lies within the Middle Chattahoochee-Walter

F. George Reservoir watershed (Ref. 14, p.1). The upstream watershed is the Middle Chattahoochee-Lake Harding watershed (Ref. 16, p. 1).

Muscogee County is located on the Fall Line between the Piedmont and Upper Coastal Plain geological regions. The Pine Mountain physiographic province of the Piedmont is located in the northern part of the county, and the Fall Line Hills physiographic province of the Upper Coastal Plain is located in the southern part of the county (Ref. 17, pp. 1, 2). The Fall Line is a boundary of bedrock geology, but it can also be recognized from stream geomorphology. Upstream from the Fall Line, rivers and streams typically have very small floodplains and do not have well-developed meanders. Within a mile or so downstream of the Fall Line, rivers and streams typically have floodplains or marshes across which they flow, and within 3 or 4 miles they meander (Ref. 18, p. 3).

The Piedmont is a region of moderate-to-high-grade metamorphic rocks such as schists, gneisses, and igneous rocks such as granite. Piedmont soils are commonly red due to the khandite-group clays and iron oxides present from the intense weathering of feldspar-rich igneous and metamorphic rock (Ref. 18, pp. 2, 3).

The Coastal Plain is a region of Cretaceous and Cenozoic sedimentary rocks and sediments. The strata near the Fall Line are underlain by igneous and metamorphic rocks like those of the Piedmont. The sedimentary rocks of the Coastal Plain partly consist of sediment eroded from the Piedmont and partly of limestones generated by marine organisms. The most economically significant mineral resource of the Coastal Plain is kaolin, a clay-rich rock that is mined in pits near the Fall Line (Ref. 18, pp. 3, 4).

Surficial aquifers are present throughout Georgia. In the Piedmont, surficial aquifers consist of soil, saprolite, stream alluvium, colluvium, and other surficial deposits. In the Coastal Plain, surficial aquifers consist of intermixed layers of sand, clay, and limestone. The most productive aquifers are in the Coastal Plain in the southern part of the state. Coastal Plain aquifers are generally confined except near their northern limits, where they crop out or are near the surface (Ref. 19, p. 1). The Cretaceous aquifer and aquifer systems are the major source of groundwater in east-central Georgia (Ref. 19, p. 2). The Providence aquifer underlies southwestern Georgia, and the Dublin, Midville, and Dublin-Midville aquifers are in east-central Georgia (Ref. 20, p. 1). Wells penetrating into the Cretaceous aquifers range from 30 to 750 feet in deep and yield 50–1,200 gallons per minute (Ref. 19, p. 2).

2.3 PREVIOUS RELEASES AND INVESTIGATIONS

A PA was conducted by GA EPD in March 1984 (Ref. 4, pp. 1-15). The PA documented ownership information, waste information (waste codes), and estimated waste quantities. The PA also identified the site location, when site activities began, when the RCRA permit was filed, and other general site information. No spills or releases were reported at the site (Ref. 4, pp. 3, 8, 9). No further site investigations are documented.

2.4 SOURCE AREAS

Based on information in the PA, the following potential sources were identified (Ref. 4, pp. 3, 9):

- | | |
|---|----------------|
| 1. Former underground storage tank (500 gallons) | Clean closed |
| 2. Former container (55-gallon drums) storage area (550 gallons/year) | Clean closed |
| 3. Acid neutralization pit (600 gallons/year) | No information |

The underground storage tank was used as a backup for catch pans in loading/unloading and drumming operations for organic solvents that were collected in catch pans and stored in 55-gallon drums. No release controls or containment measures have been documented (Ref. 5, p. 2).

The drums were used for storage of off-spec solvents returned to the plant by customers, storage of inorganic acids, and storage of halogenated and non-halogenated solvents. No release controls or containment measures have been documented (Refs. 4, p. 4; 5, p. 2).

The acid neutralization pit was used for treatment of inorganic acids that were neutralized and discharged to the city sewer (Refs. 4, p. 9; 5, pp. 2, 3). No other information is available regarding the acid neutralization pit. The neutralization of acid wastes may have occurred in a surface impoundment, a tank, or some other structure. Once treated, neutralized wastes were discharged to the city sewer. Prior to neutralization, the acid wastes could have been classified as corrosive. No release controls or containment measures have been documented (Ref. 5, p. 3).

3.0 PATHWAYS

This section discusses the groundwater migration, surface water migration, soil exposure, and air migration pathways. This section also discusses the targets associated with each pathway and draws pathway-specific conclusions.

3.1 GROUNDWATER MIGRATION PATHWAY

The groundwater migration pathway is not a primary pathway of concern due to lack of groundwater-dependent receptors. Municipal water supplied by Columbus Water Works (CWW) is available to the majority of the Columbus area residents and is provided by a surface water intake near the Oliver Lake Dam in the Chattahoochee River north of Columbus and upstream of the site. Portions of the drinking water for Phenix City, Alabama (west), Harris County, Georgia (north), and Talbot County, Georgia (east), are also supplied by CWW. Phenix City, Alabama (west), and Smiths Station, Alabama (north), also have municipal intakes near the Columbus intake. There are no documented private groundwater wells within the 4-mile target distance (Ref. 21, p.1).

3.2 SURFACE WATER PATHWAY

The surface water pathway is a pathway of concern due to the potential to discharge contaminants into the Chattahoochee River. Surface water drainage patterns from Ashland are unknown. Topographic contours suggest a southerly flow from the site; however, a major highway lies between the site and the Chattahoochee River, and runoff may, therefore, be diverted in a westerly direction. The southern PPE is approximately 4,500 feet from the site, and the western PPE is approximately 4,250 feet from the site. The 15-mile TDL from the most downstream PPE (southern) terminates within the Chattahoochee River approximately 1,200 feet north of Sewelson Creek (Ref. 1).

The Chattahoochee River is used for boating, fishing, and swimming along with other recreational uses. Several species of bass, catfish, and crappie are recreationally fished in the Chattahoochee River in the vicinity of Columbus (Refs. 22; p. 3; 23, p.1). Both the Columbus municipal water system and the Phenix City water system intakes are located in Lake Oliver (Chattahoochee River) near the dam, upgradient of the facility (Refs. 1; 21, p. 1). The base discharge flow of the Chattahoochee River at Columbus is 9,550 cubic feet per second (cfs) (Ref. 24, p.1). Water for Fort Benning residents is provided by a surface water intake on Upatoi Creek located upgradient of Fort Benning sewage treatment facilities (Ref. 21, p.1). Water flow in the Upatoi is westerly into the Chattahoochee (Ref. 1).

Sensitive environments identified along the surface water pathway include 4.3 total miles of eligible wetland frontage on the Chattahoochee River (Ref. 25). There are 14 rare and special concern animals listed in Muscogee County, 4 of which are listed both at the federal and state level as threatened or endangered, and 2 of which are listed at the state level. There are 22 rare and special concern plants listed in Muscogee County, 4 of which are listed both at the federal and state level as threatened or endangered,

and 6 of which are listed at the state level (Ref. 26, pp.1, 2). The exact locations of these species are unknown.

3.3 SOIL EXPOSURE PATHWAY

The soil exposure pathway is of minimal concern at Ashland. No soil contamination has been documented at Ashland; however, spills may have occurred during product transfer operations.

Land use within 1 mile of the site is predominantly industrial and urban. The site is located in an industrial area and is bounded on two sides by railroad spurs. There are residential housing units and several churches located within 0.25 mile of the site. An elementary school, public library, Memorial Stadium, and the city and county jails are located within 0.5 mile of the site. The closest school, Manly Taylor Elementary, is 2,400 feet east of the site. The county and city jails are located 2,300 and 2,500 feet north, respectively, of the site. Located between 0.5 and 1 mile from the site are the city gas works, post office, golf course, fair grounds, ball park, city auditorium, cemetery, railroad station, museum, the Adult Education Night School, and private residences (Refs. 1; 27, p. 1).

3.4 AIR PATHWAY

The air pathway is of minimal concern at Ashland. No samples have been collected, no violations have been documented, and no evidence exists to suggest any type of threat.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The Ashland Chemical Company recycled, reclaimed, and resold halogenated and non-halogenated solvents. In addition, acid wastes were neutralized and discharged to the city sewer. This site is no longer active and appears to have been vacated by Ashland in 1991. No environmental samples have been collected from the facility. The GA EPD conducted a PA in 1984, identifying general waste types and quantities. No spills or discharges were documented. At the time of the PA, the 500-gallon storage tank had been clean closed in 1983, and a plan was on file for closure of the drummed waste storage area. The PA recommended "no further action." The drum storage area was clean closed in 1984, and the RCRA permit was withdrawn. A file review conducted in 1999 noted that a 1991 project note recommended "no further remedial action planned" because no violations or spills had ever occurred at the site.

Three potential source areas were identified, but there were inadequate data regarding hazardous constituent quantity data; therefore, reasonable worst-case assumptions were utilized to evaluate potential pathways. The surface water and soil exposure pathways were evaluated for Ashland. The groundwater pathway was not evaluated because the municipal water source is from a surface water intake located upstream of the site and supplies drinking water for all targets within a 4-mile radius. The air pathway was not evaluated because there were no reported releases at the site. No pathway generated an elevated score. Because the site does not generate an appreciable HRS score, even in worst-case scenarios, no further remedial action is recommended at this time for the Ashland facility.

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CONFIDENTIAL

**HAZARD RANKING SYSTEM SCORE
FOR
ASHLAND CHEMICAL COMPANY SITE
COLUMBUS, MUSCOGEE COUNTY, GEORGIA
EPA ID GAD059558601**

A Hazardous Ranking Score has been prepared using the Hazard Ranking System (HRS) score sheets for the Ashland Chemical Company site (Ashland), located in Columbus, Muscogee County, Georgia. The surface water and soil exposure pathways were evaluated using data obtained from U.S. Environmental Protection Agency (EPA) site files and the Preliminary Assessment (PA) conducted by the Georgia Environmental Protection Division (GA EPD) in 1984. No current site files were available from the GA EPD. The groundwater pathway was not evaluated as municipal water sources are from surface water intakes and supply drinking water for all known targets within a 4-mile radius. The air pathway was not evaluated because there were no reported releases at the site, or evidence to suggest a release. Although no samples have been collected from the facility, the surface water and soil exposure pathway scores were generated using worst-case assumptions of contamination. The following scores represent a worst-case scenario in areas where data gaps were present. The data gaps are discussed below.

Pathway Scores

Groundwater Pathway Score (S_{GW})	=	0.0
Surface Water Pathway Score (S_{SW})	=	0.18
Soil Exposure Pathway Score (S_{SE})	=	0.005
Air Pathway Score (S_{AIR})	=	0.0

OVERALL SITE SCORE = 0.09

Sources and Waste Characteristics

Three potential source areas were identified at Ashland, but data were inadequate regarding hazardous constituent quantity data; therefore, reasonable worst-case assumptions were utilized to evaluate potential pathways. The site score for Ashland was based on a Hazardous Waste Quantity value of 10 for all pathways.

Data gaps exist regarding the exact contaminants on site. Worst-case constituents (highest toxicity) were chosen to represent the various categories of hazardous wastes reportedly used at the site, such as halogenated solvents (carbon tetrachloride and 1,1,2-trichloroethane), non-halogenated solvents (benzene), and inorganic acids (hydrochloric acid). Source calculations were determined assuming the presence of above-mentioned contaminants. Based on information in the PA, the following potential sources were identified:

- | | |
|---|----------------|
| 1. Former underground storage tank (500 gallons) | Clean closed |
| 2. Former container (55-gallon drums) storage area (550 gallons/year) | Clean closed |
| 3. Acid neutralization pit (600 gallons/year) | No information |

Groundwater Migration Pathway

The groundwater pathway was not evaluated because municipal water sources are from surface water intakes located upstream of the site. These intakes supply drinking water for all known targets within a 4-mile radius in Georgia and Alabama.

Surface Water Migration Pathway

The surface water migration pathway generated the highest pathway score of 0.18. Surface water from Ashland drains to the Chattahoochee River. Although the Columbus, Georgia and Phenix City, Alabama municipal water systems draw water from surface water intakes in the Chattahoochee River, the intake is located near Oliver Dam, which is approximately 4 miles upstream of the site. Other targets include the wetlands along the Chattahoochee River and fisheries in the Chattahoochee. Several federal- or state-designated threatened or endangered species have been identified to inhabit Muscogee County; however, their habitat locations within the surface water pathway are unknown, and high dilution multipliers restrict any appreciable values.

Since no environmental samples have been collected, the surface water pathway score was based on a worst-case Likelihood of Release value of 500. For the Drinking Water Threat component, the Target value was 5 due to a major recreation area resource (Chattahoochee River), and the Waste Characteristics value was 6, resulting in a Drinking Water Threat component score of 0.18.

For the Human Food Chain component of the surface water pathway, a Target value of 0 was determined for potential contamination to Chattahoochee River fisheries due to the river's high flow rate (9,550 cfs) and subsequent dilution factor. A Waste Characteristic value of 32 was used due to the relatively high bioaccumulation value for benzene. These values resulted in a Human Food Chain component score of 0.

For the Environmental Threat component of the surface water pathway, a Target value of 0.015 was determined for potential contamination of 4.3 miles of eligible wetland frontage on the Chattahoochee River. The Waste Characteristic value of 18 was used due to the ecotoxicity/persistence/bioaccumulation value of benzene. These values resulted in an Environmental Threat component of 0.00164. Adding the three components of the surface water pathway and rounding to the nearest hundredth resulted in a pathway score of 0.18.

Soil Exposure Pathway

The soil exposure pathway scored only 0.005. The score was limited, in part, because there are no known resident targets, workers, or sensitive environments on site. Even though no contaminated soil has been documented to exist, past practices at the site could have resulted in inadvertent leaks or spills, though none have been reported. As a worst-case scenario, soil over the entire 2-acre site was assumed to be contaminated with the same source contaminants previously described.

The Resident Population component of the soil exposure pathway used a Likelihood of Exposure value of 550. Because Ashland is no longer an active facility, and is located in a highly industrialized area, the Target value was 0. A Waste Characteristics value of 10 was used assuming the same site contaminants are in the soil. Using a multiplier of 0 resulted in a component score of 0.

The Nearby Population component of the soil exposure pathway used a Likelihood of Exposure value of 5 based on accessibility of the site with no recreational use and a two-acre area of contamination. The nearby population resulted in a Target value of 8.1, and the Waste Characteristics value remained at 10, resulting in a Nearby Population component of 0.005. The addition of the Resident Population and Nearby Population components yielded a soil exposure pathway score of 0.005.

Air Migration Pathway

The air pathway was not evaluated because there were no reported releases at the site.

Conclusions

The Ashland Chemical Company recycled, reclaimed, and resold halogenated and non-halogenated solvents. In addition, acid wastes were neutralized and discharged to the city sewer. This site is no longer active and appears to have been vacated by Ashland in 1991. No environmental samples have been collected from the facility. The GA EPD conducted a PA in 1984. The PA identified general waste types and quantities. No spills or discharges were documented. The PA recommended "no further action". A file review conducted in 1999 noted that a 1991 project note recommended "no further remedial action planned" because no violations or spills had ever occurred at the site.

A subsequent review of the file material and the resulting worst-case scoring of the site failed to generate an appreciable HRS score. Based on the information gathered and the resulting low HRS score, a designation of No Further Remedial Action Planned (NFRAP) is recommended.

GROUNDWATER MIGRATION PATHWAY SCORESHEET

NOT EVALUATED – NO TARGETS

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Release to an Aquifer</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
1. Observed Release	550	_____
2. Potential to Release		_____
2a. Containment	10	_____
2b. Net Precipitation	10	_____
2c. Depth to Aquifer	5	_____
2d. Travel Time	35	_____
2e. Potential to Release	500	_____
3. Likelihood of Release (Higher of lines 1 or 2e)	550	_____

Waste Characteristics

4. Toxicity/Mobility	10,000	_____
5. Hazardous Waste Quantity	1,000,000	_____
6. Waste Characteristics	100	_____

Targets

7. Nearest Well	50	_____
8. Population		_____
8a. Level I Concentration	No Maximum	_____
8b. Level II Concentration	No Maximum	_____
8c. Potential Contamination	No Maximum	_____
8d. Population (Lines 8a+8b+8c)	No Maximum	_____
9. Resources	5	_____
10. Wellhead Protection Area	20	_____
11. Targets (Lines 7+8d+9+10)	No Maximum	_____

Groundwater Migration Score for Crystalline Rock Aquifer

12. Aquifer Score (Lines 3 x 6 x 11 / 82,500)	100	_____
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Groundwater Migration Pathway Score

13. Groundwater Migration Pathway Score (S _{GW}) (Highest value from Line 12 for all aquifers evaluated)	100	_____
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**SURFACE WATER OVERLAND/FLOOD MIGRATION PATHWAY SCORESHEET
DRINKING WATER THREAT COMPONENT (Part 1 of 3)**

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Release to Surface Water</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
1. Observed Release	550	_____
2. Potential to Release		
2a. Distance to surface water <2500 feet	500	_____
Distance to surface water >2500 feet and:		
2b. Site in annual or 10-year floodplain	500	_____ 500
2c. Site in 100-year floodplain	400	_____
2d. Site in 500-year floodplain	300	_____
2e. Site outside 500-year floodplain	100	_____
3. Likelihood of Release (LR) (Highest value of Lines 1, 2a, 2b, 2c, 2d, or 2e)	550	_____ 500

Waste Characteristics

4. Toxicity/Persistence	10,000	_____ 400
5. Hazardous Waste Quantity	1,000,000	_____ 10
6. Waste Characteristics (WC)	1,000	_____ 6

Targets

7. Nearest Intake	50	_____ 0
8. Population		
8a. Level I Concentrations	No Maximum	_____
8b. Level II Concentrations	No Maximum	_____
8c. Potential Contamination	No Maximum	_____ 0
8d. Population (Lines 8a+8b+8c)	No Maximum	_____ 0
9. Resources	5	_____ 5
10. Targets (T) (Lines 8d+9+10)	No Maximum	_____ 5

Surface Water Migration Score for Drinking Water Threat Component

11. Drinking Water Threat Score (Lines 3 x 6 x 10 / 82,500) 500 x 6 x 5 / 82,500 = 0.18	100	_____ 0.18
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**SURFACE WATER OVERLAND/FLOOD MIGRATION PATHWAY SCORESHEET
HUMAN FOOD CHAIN THREAT COMPONENT (Part 2 of 3)**

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Release to Surface Water</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
12. Likelihood of Release (LR) (Value from Line 3)	550	<u>500</u>

Waste Characteristics

13. Toxicity/Persistence/Bioaccumulation	5E+12	<u>200,000</u>
14. Hazardous Waste Quantity	1,000,000	<u>10</u>
15. Waste Characteristics (WC)	1,000	<u>32</u>

Targets

16. Food Chain Individual	50	<u>0</u>
17. Population		
17a. Level I Concentrations	No Maximum	<u></u>
17b. Level II Concentrations	No Maximum	<u></u>
17c. Potential Human Food Chain Contamination	No Maximum	<u>0</u>
17d. Population (Lines 17a+17b+17c)	No Maximum	<u>0</u>
18. Targets (T) (Lines 16 + 17d)	No Maximum	<u>0</u>

Surface Water Migration Score for Human Food Chain Threat Component

19. Human Food Chain Threat Score (Lines 12 x 15 x 18 / 82,500) 500 x 32 x 0 / 82,500 = 0	100	<u>0</u>
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**SURFACE WATER OVERLAND/FLOOD MIGRATION PATHWAY SCORESHEET
ENVIRONMENTAL THREAT COMPONENT (Part 3 of 3)**

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Release to Surface Water</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
20. Likelihood of Release (LR) (Value from Line 3)	550	<u>500</u>

Waste Characteristics

21. Ecotoxicity/Persistence/Ecobioaccumulation	5E+12	<u>20,000</u>
22. Hazardous Waste Quantity	1,000,000	<u>10</u>
23. Waste Characteristics (WC)	1,000	<u>18</u>

Targets

24. Sensitive Environments		
24a. Level I Concentrations	No Maximum	<u> </u>
24b. Level II Concentrations	No Maximum	<u> </u>
24c. Potential Contamination	No Maximum	<u>0.015</u>
24d. Population Value of Sensitive Environments (Lines 24a+24b+24c)	No Maximum	<u>0.015</u>
25. Targets (T) (Value from Line 24d)	No Maximum	<u>0.015</u>

Surface Water Migration Score for Environmental Threat Component

26. Environmental Threat Score (Lines 20 x 23 x 25 / 82,500) 500 x 18 x 0.015 / 82,500 = 0.00164	60	<u>0.00164</u>
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Surface Water Migration Score for Overland/Flood Migration Pathway

27. Surface Water Pathway Score (S _{sw}) (Drinking Water Score + Food Chain Score + Environmental Score) 0.18 + 0.0 + 0.00164 = 0.18164	100	<u>0.18</u>
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**SOIL EXPOSURE PATHWAY SCORESHEET
RESIDENT POPULATION COMPONENT (Part 1 of 2)**

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Exposure</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
1. Likelihood of Exposure (LE)	550	<u>550</u>

Waste Characteristics

2. Toxicity	10,000	<u>1,000</u>
3. Hazardous Waste Quantity	1,000,000	<u>10</u>
4. Waste Characteristics (WC)	1,000	<u>10</u>

Targets

5. Resident Individual	50	<u>0</u>
6. Resident Population		
6a. Level I Concentrations	No Maximum	
6b. Level II Concentrations	No Maximum	
6c. Resident Population (Lines 6a+6b)	No Maximum	<u>0</u>
7. Workers	15	<u>0</u>
8. Terrestrial Sensitive Environments	No Maximum	<u>0</u>
9. Resources	5	<u>0</u>
10. Targets (T) (Lines 5 + 6c + 7 + 8 + 9)	No Maximum	<u>0</u>

Soil Exposure Score for Resident Population Component

11. Resident Population Score (Lines 1 x 4 x 10 / 82,500)	100	<u>0</u>
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**SOIL EXPOSURE PATHWAY SCORESHEET
NEARBY POPULATION COMPONENT (Part 2 of 2)**

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Exposure</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
12. Attractiveness/Accessibility	100	<u>10</u>
13. Area of Contamination	100	<u>20</u>
14. Likelihood of Exposure (LE) (From SI Table 19)	500	<u>5</u>

Waste Characteristics

15. Toxicity	10,000	<u>1,000</u>
16. Hazardous Waste Quantity	1,000,000	<u>10</u>
17. Waste Characteristics (WC)	1,000	<u>10</u>

Targets

18. Nearby Individual	1	<u>1</u>
19. Population within 1 mile	No Maximum	<u>7.1</u>
20. Targets (T) (Lines 18 + 19)	No Maximum	<u>8.1</u>

Soil Exposure Score for Nearby Population Component

21. Nearby Population Score (Lines 14 x 17 x 20 / 82,500) $5 \times 10 \times 1.71 / 82,500 = 0.001$	100	<u>0.005</u>
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Soil Exposure Pathway Score

22. Soil Exposure Pathway Score (S_{SE}) (Resident Population Score + Nearby Population Score) $0 + 0.005 = 0.005$	100	<u>0.005</u>
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AIR MIGRATION PATHWAY SCORESHEET

NOT EVALUATED

FACTOR CATEGORIES AND FACTORS

<u>Likelihood of Release to Air</u>	<u>Maximum Value</u>	<u>Assigned Value</u>
1. Observed Release	550	_____
2. Potential to Release		
2a. Gas Potential to Release	500	_____
2b. Particulate Potential to Release	500	_____
2c. Potential to Release (Higher value of Lines 2a and 2b)	500	_____
3. Likelihood of Release (LR) (Higher value of Lines 1 and 2)	550	_____
<u>Waste Characteristics</u>		
4. Toxicity/Mobility	10,000	_____
5. Hazardous Waste Quantity	1,000,000	_____
6. Waste Characteristics (WC)	100	_____
<u>Targets</u>		
7. Nearest Individual	50	_____
8. Population		
8a. Level I Concentrations	No Maximum	_____
8b. Level II Concentrations	No Maximum	_____
8c. Potential Contamination	No Maximum	_____
8d. Population (Lines 8a+8b+8c)	No Maximum	_____
9. Resources	5	_____
10. Sensitive Environments		
10a. Actual Contamination	No Maximum	_____
10b. Potential Contamination	No Maximum	_____
10c. Sensitive Environments Value (Lines 10a + 10b)	No Maximum	_____
11. Targets (T) (Lines 7 + 8d + 9 + 10c)	No Maximum	_____
<u>Air Migration Pathway Score</u>		
12. Air Migration Pathway Score (Lines 3 x 6 x 11 / 82,500)	100	_____

SITE INSPECTION WORKSHEETS

CERCLIS IDENTIFICATION NUMBER

GAD059558601

SITE LOCATION					
SITE NAME: LEGAL, COMMON, OR DESCRIPTIVE NAME OF SITE ASHLAND CHEMICAL COMPANY					
STREET ADDRESS, ROUTE, OR SPECIFIC LOCATION IDENTIFIER 716 Sixth Street					
CITY Columbus		STATE Georgia		ZIP CODE 31901	TELEPHONE 404-327-3669
COORDINATES: LATITUDE and LONGITUDE 32° 27' 6" N., 84° 59' 5" W.		TOWNSHIP, RANGE, AND SECTION			
OWNER/OPERATOR IDENTIFICATION					
OWNER ASHLAND Oil Inc.			OPERATOR Ashland Chemical Company		
OWNER ADDRESS 5200 Blazer Parkway			OPERATOR ADDRESS 716 Sixth Street		
CITY Dublin			CITY Columbus		
STATE Ohio	ZIP CODE 43017	TELEPHONE 614-889-3806	STATE Georgia	ZIP CODE 31902	TELEPHONE 404-327-3669
SITE EVALUATION					
AGENCY/ ORGANIZATION TN & Assoc., Inc. for Region 4 EPA Superfund Technical Assessment Team (STAT) contract					
INVESTIGATOR Brenda J. Shaw					
CONTACT Matt Ellender					
ADDRESS 840 Kennesaw Ave, Suite 7					
CITY Marietta		STATE Georgia		ZIP CODE 30060	
TELEPHONE 678-355-5550		DATE SUBMITTED February 6, 2001			

References: 1.4

GENERAL INFORMATION

Site Description and Operational History: Provide a brief description of the site and its operational history. State the site name, owner, operator, type of facility and operations, size of property, active or inactive status, and years of waste generation. Summarize waste treatment, storage, or disposal activities that have or may have occurred at the site; note whether these activities are documented or alleged. Identify all source types and prior spills, floods, or fires. Summarize highlights of the PA and other investigations. Cite references.

The Ashland Chemical Company facility is located in a heavily industrialized area at 716 6th Street, approximately 1.5 miles south-southwest of the center of Columbus, Georgia (see Figure 1). The geographic coordinates of the facility are 32° 27' 6" north latitude and 84° 59' 5" west longitude (Ref. 1). The site is 300 x 300 ft (2 acres) in size (Ref. 2, p. 1). The major on-site feature is a building that measures approximately 100 x 200 ft (Ref. 3, p. 1), though it is not known if this building was part of Ashland's operations. A 500-gallon underground storage tank, a 55-gallon drum storage area, and an acid neutralization pit were also located on site (Ref. 4, pp. 3, 9). It is not known if the site is fenced or paved.

According to the 1984 Preliminary Assessment (PA), Ashland Chemical Company began operations on this site in 1945 and had been in operation for 39 years at the time of the PA (Ref. 4, pp. 3, 9). Ashland no longer occupies this site. Little information was available regarding site operations, though Ashland's "Contingency Plan and Emergency Procedures" indicated that the facility operations involved reclaiming/recycling/resale of organic solvents and inorganic acids (ref. 5, pp. 2-4). Halogenated and non-halogenated solvents, inorganic acids and inorganic corrosives were present on site being used in various processes and quantities throughout the years of operation. Hazardous wastes were manifested to off-site disposal. A 500-gallon underground storage tank was identified that acted as a backup "catch" facility for inadvertent product spillage and/or line flush due to loading/unloading and drumming operations of organic solvents. Customers brought spent organic solvents and inorganic corrosives for treatment in 55-gallon drums. Acid wastes were treated in an acid neutralization pit and discharged to the city sewer. Spent solvents were treated and shipped off site to a treatment/storage/disposal facility (Refs. 4, pp.3, 4; 5, pp. 2-4). No further details about specific site operations are known.

Central of Georgia Railroad Company is the current owner of the site as well as two adjacent lots east and west of the site on which railroad spurs are located. Tax records show no changes of ownership over the past 10 years, and it is not known whether Ashland Chemical Company owned the site at one time or leased it from Central of Georgia (Ref. 2, p. 1). As of 1991, Ashland no longer maintained a business license at this location (Ref. 6, p.1).

Ashland applied for a Part A Resource Conservation and Recovery Act (RCRA) permit November 12, 1980 (Ref. 4, p. 3). The 500-gallon underground storage tank was closed in accordance with Georgia hazardous waste regulations during May-July 1983 (Ref. 4, pp. 3, 8). The drummed waste storage area was closed in 1984, and the RCRA permit application was withdrawn with the EPA ID number classified as inactive in September 1984 (Ref. 7, p. 1).

No listings were found in the CERCLIS database for the Ashland site, and it is not known when site discovery occurred (Ref. 8, p. 1). A PA was conducted by Georgia Environmental Protection Department (GA EPD) in March 1984 (Ref. 4, pp. 1-15). The PA documented waste information (waste codes) and estimated waste quantities. Ashland reported no spills or releases (Ref. 4, pp. 3, 8, 9). It is stated in the Envirofacts database that the Ashland facility does not have a Handler/Facility Classification in the current RCRIS database (Ref. 9, p. 2).

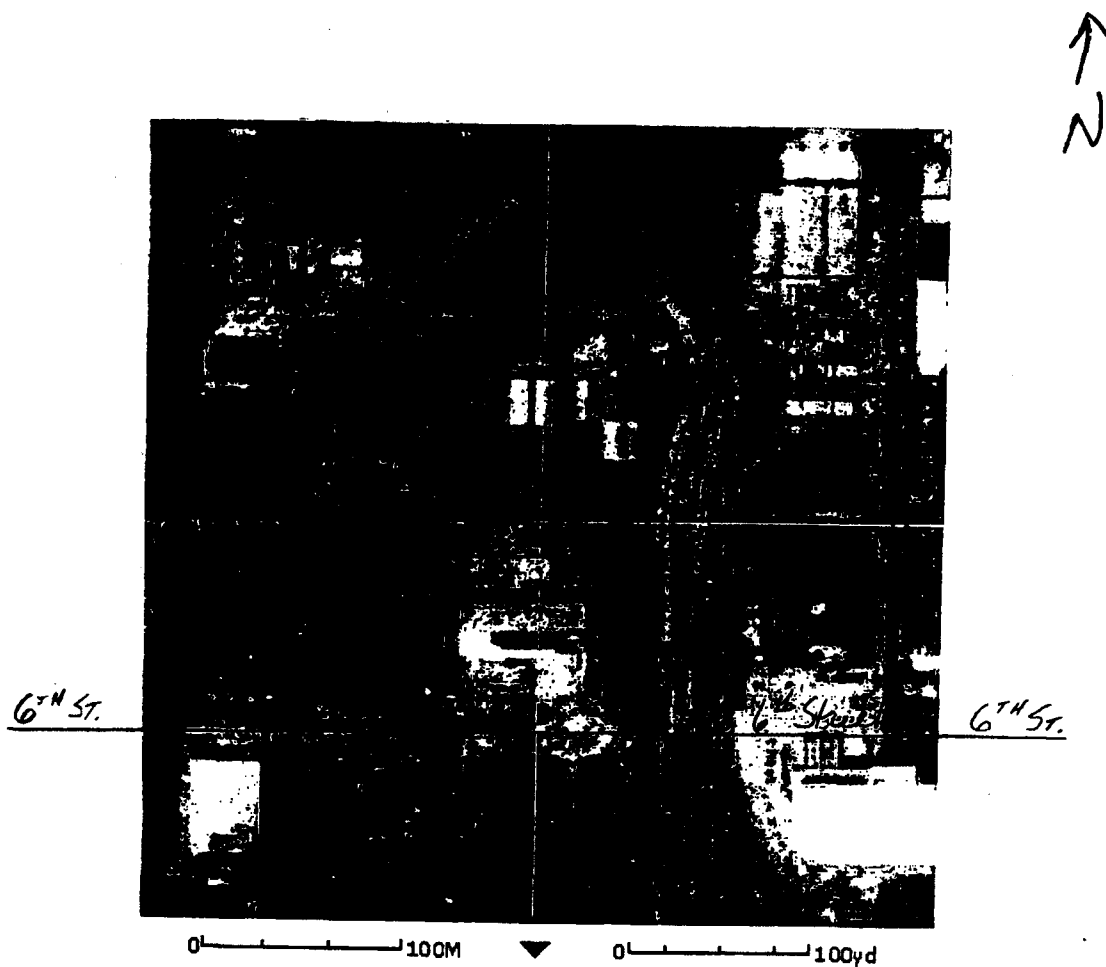
No further assessments or investigations have been conducted, and the PA recommended "no further action" (Ref. 4, p.8). Since Ashland no longer handles or generates hazardous waste, their RCRA permit has been withdrawn and the facility is no longer regulated under RCRA (Ref. 7, p. 1). A file review conducted in 1999 noted that a 1991 project note recommended "no further remedial action planned" (NFRAP) because no violations or spills had ever occurred at the site (Ref. 4, pp. 2, 15).

Based on information in the PA conducted by GA EPD (Ref. 4, pp. 3, 9), the following potential sources were identified:

- | | |
|---|----------------|
| 1. Former underground storage tank (500 gallons) | Clean closed |
| 2. Former container (55-gallon drums) storage area (550 gallons/year) | Clean closed |
| 3. Acid neutralization pit (600 gallons/year) | no information |

GENERAL INFORMATION (continued)

Site Sketch: Provide a sketch of the site. Indicate all pertinent features of the site and nearby environments including sources of wastes, areas of visible and buried wastes, buildings, residences, access roads, parking areas, fences, fields, drainage patterns, water bodies, vegetation, wells, sensitive environments, and other features.



Microsoft TerraServer. Satellite image of Columbus, Georgia, United States. Internet address: <http://www.terraServer.microsoft.com/image.asp?S=11&T=1&X=1724&y=8982&Z=16&W=0> Accessed January 12, 2001.

Reference: 3

GENERAL INFORMATION (continued)

Source Descriptions: Describe all sources at the site. Identify source type and relate to waste disposal operations. Provide source dimensions and the best available waste quantity information. Describe the condition of sources and all containment structures. Cite references.

SOURCE TYPES

Landfill: A man-made (by excavation or construction) or natural hole in the ground into which wastes have come to be disposed by backfilling, or by contemporaneous soil deposition with waste disposal.

Surface Impoundment: A natural topographic depression, man-made excavation, or diked area, primarily formed from earthen materials (lined or unlined) and designed to hold an accumulation of liquid wastes, wastes containing free liquids, or sludges not backfilled or otherwise covered; depression may be wet with exposed liquid or dry if deposited liquid has evaporated, volatilized or leached; structures that may be described as lagoon, pond, aeration pit, settling pond, tailings pond, sludge pit; also a surface impoundment that has been covered with soil after the final deposition of waste materials (i.e., buried or backfilled).

Drum: A portable container designed to hold a standard 55-gallon volume of wastes.

Tank and Non-Drum Container: Any device, other than a drum, designed to contain an accumulation of waste that provides structural support and is constructed primarily of fabricated materials (such as wood, concrete, steel, or plastic); any portable or mobile device in which waste is stored or otherwise handled.

Contaminated Soil: An area or volume of soil onto which hazardous substances have been spilled, spread, disposed, or deposited.

Pile: Any non-containerized accumulation above the ground surface of solid, non-flowing wastes; includes open dumps. Some types of waste piles are:

Chemical Waste Pile: A pile consisting primarily of discarded chemical products, by-products, radioactive wastes, or used or unused feedstocks.

Scrap Metal or Junk Pile: A pile consisting primarily of scrap metal or discarded durable goods (such as appliances, automobiles, auto parts, batteries, etc.) composed of materials containing hazardous substances.

Tailings Pile: A pile consisting primarily of any combination of overburden from a mining operation and tailings from a mineral mining, beneficiation, or processing operation.

Trash Pile: A pile consisting primarily of paper, garbage, or discarded non-durable goods containing hazardous substances.

Land Treatment: Landfarming or other method of waste management in which liquid wastes or sludges are spread over land and tilled, or liquids are injected at shallow depths into soils.

Other: Sources not in categories listed above.

GENERAL INFORMATION (continued)

Source Description: Include description of containment per pathway for groundwater (see HRS Table 3-2), surface water (see HRS Table 4-2), and air (see HRS Tables 6-3 and 6-9).

Source : Halogenated and non-halogenated solvents; inorganic acids; inorganic corrosives
Source Type: Drums

The drums were used for storage of off-spec solvents returned to the plant by customers. Storage of wastes included halogenated (waste codes F001, F002) and non-halogenated solvents (D001, F003, F005), and inorganic acids and corrosives (D002). Specific compounds used in Table 3 were "worst-case" compounds from waste codes F001 (carbon tetrachloride), F002 (1,1,2-trichloroethane), and F005 (benzene). No release controls or containment measures are documented (Refs. 4, p. 4; 5 p. 2).

Source : Halogenated and non-halogenated solvents
Source Type: Underground storage tank

The underground storage tank was used as a backup for catch pans in loading/unloading and drumming operations for organic solvents which were collected in catch pans and stored in 55-gallon drums. The PA identified the following No release controls or containment measures are documented (Ref. 5, p. 2).

Source : Acid neutralization pit
Source Type: Surface impoundment

The acid neutralization pit was used for treatment of inorganic acids that were neutralized and discharged to the city sewer (Refs. 4, p. 9; 5, pp. 2, 3). No other information is available regarding the acid neutralization pit. The neutralization of acid wastes may have occurred in a surface impoundment, a tank, or some other structure. Once treated, wastes were discharged to the city sewer, so it is assumed that these wastes were not considered hazardous. Prior to neutralization, the acid wastes could have been classified as corrosive. No release controls or containment measures are documented (Ref. 5, p. 3).

Hazardous Waste Quantity (HWQ) Calculation: SI Tables 1 and 2 (See HRS Tables 2-5, 2-6, and 5-2). (Show calculation for soil exposure pathway, if divisor is different):

Hazardous Constituent Quantity data are incomplete; therefore; the HWQ is assigned a score of 10.

Source Waste Quantity Total = 10

HWQ = 10

References: 4, 5

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SI TABLE 1: HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES (HRS Table 2-5)

		Single Source Sites (assigned HWQ scores)				Multiple Source Sites		
(Column 1) TIER	(Column 2) Source Type	(Column 3) HWQ = 10	(Column 4) HWQ = 100	(Column 5) HWQ = 10,000	(Column 6) HWQ = 100,000	(Column 7) Divisors for Assigning Source WQ Values	(Column 2) Source Type	(Column 1) TIER
A Hazardous Constituent Quantity	N/A	HWQ = 1 if Hazardous Constituent Quantity data are complete HWQ = 10 if Hazardous Constituent Quantity data are not complete	>100 to 10,000 lbs.	>10,000 to 1 million lbs.	>1 million lbs.	lbs + 1	N/A	A Hazardous Constituent Quantity
B Hazardous Wastestream Quantity	N/A	≤500,000 lbs	>500,000 to 50 million lbs.	>50 million to 5 billion lbs.	>5 billion lbs	lbs + 5,000	N/A	B Hazardous Wastestream Quantity
C Volume	Landfill	≤6.75 million ft³ ≤250,000 yd³	>6.75 million to 675 million ft³ >250,000 to 25 million yd³	>675 million to 67.5 billion ft³ >25 million to 2.5 billion yd³	>67.5 billion ft³ >2.5 billion yd³	ft³ + 67,500 yd³ + 2,500	Landfill	
	Surface impoundment	≤6,750 ft³ ≤250 yd³	>6,750 to 675,000 ft³ >250 to 25,000 yd³	>675,000 to 67.5 million ft³ >25,000 to 2.5 million yd³	>67.5 million ft³ >2.5 million yd³	ft³ + 67.5 yd³ + 2.5	Surface impoundment	
	Drums	≤1,000 drums	>1,000 to 100,000 drums	>100,000 to 10 million drums	>10 million drums	Drums + 10	Drums	
	Tanks and non- drum containers	≤50,000 gallons	>50,000 to 5 million gallons	>5 million to 500 million gallons	>500 million gallons	Gallons + 500	Tanks and non- drum containers	
	Contaminated soil	≤6.75 million ft³ ≤250,000 yd³	>6.75 million to 675 million ft³ >250,000 to 25 million yd³	>675 million to 67.5 billion ft³ >25 million to 2.5 billion yd³	>67.5 billion ft³ >2.5 billion yd³	ft³ + 67,500 yd³ + 2,500	Contaminated soil	
	Pile	≤6,750 ft³ ≤250 yd	>6,750 to 675,000 ft³ >250 to 25,000 yd³	>675,000 to 67.5 million ft³ >25,000 to 2.5 million yd³	>67.5 million ft³ >2.5 million yd³	ft³ + 67.5 yd³ + 2.5	Pile	
	Other	≤6,750 ft³ ≤250 yd³	>6,750 to 675,000 ft³ >250 to 25,000 yd³	>675,000 to 67.5 million ft³ >25,000 to 2.5 million yd³	>67.5 million ft³ >2.5 million yd³	ft³ + 67.5 yd³ + 2.5	Other	

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SI TABLE 1: HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES (HRS Table 2-5)

(Column 1) TIER	(Column 2) Source Type	Single Source Sites (assigned HWQ scores)				Multiple Source Sites		(Column 2) Source Type	(Column 1) TIER
		(Column 3) HWQ = 10	(Column 4) HWQ = 100	(Column 5) HWQ = 10,000	(Column 6) HWQ = 100,000	(Column 7) Divisors for Assigning Source WQ Values			
D Area	Landfill	≤340,000 ft ² ≤7.8 acres	>340,000 to 34 million ft ² >7.8 to 780 acres	>34 million to 3.4 billion ft ² >780 to 78,000 acres	>3.4 billion ft ² >78,000 acres	ft ² + 3,400 acres + 0.078	Landfill	D Area	
	Surface Impoundment	≤1,300 ft ² ≤0.029 acres	>1,300 to 130,000 ft ² >0.029 to 2.9 acres	>130,000 to 13 million ft ² >2.9 to 290 acres	>13 million ft ² >290 acres	ft ² + 13 acres + 0.00029	Surface impoundment		
	Contaminated soil	≤3.4 million ft ² ≤78 acres	>3.4 million to 340 million ft ² >78 to 7,800 acres	>340 million to 34 billion ft ² >780 to 78,000 acres	>34 billion ft ² >78,000 acres	ft ² + 34,000 acres + 0.78	Contaminated soil		
	Pile (Tailings)	≤1,300 ft ² ≤0.029 acres	>1,300 to 130,000 ft ² >0.029 to 2.9 acres	>130,000 to 13 million ft ² >2.9 to 290 acres	>13 million ft ² >290 acres	ft ² + 13 acres + 0.00029	Pile		
	Land treatment	≤27,000 ft ² ≤0.62 acres	>27,000 to 2.7 million ft ² >0.62 to 62 acres	>2.7 million to 270 million ft ² >62 to 6,200 acres	>270 million ft ² >6,200 acres	ft ² + 270 acres + 0.0062	Land treatment		

1 ton = 2,000 pounds = 1 cubic yard = 4 drums = 200 gallons

HAZARDOUS WASTE QUANTITY (HWQ) CALCULATION

For each migration pathway, evaluate HWQ associated with sources that are available (i.e., incompletely contained) to migrate to that pathway. (Note: If *Actual Contamination Targets* exist for groundwater, surface water, or air migration pathways, assign the calculated HWQ score or 100, whichever is greater, as the HWQ score for that pathway.) For each source, evaluate the HWQ for one or more of the four tiers (SI Table 1; HRS Table 2-5) for which data exist: constituent quantity, wastestream quantity, source volume, and source area. Select the tier that gives the highest value as the source HWQ. Select the source volume HWQ rather than source area HWQ if data for both tiers are available.

Column 1 of SI Table 1 indicates the quantity tier. Column 2 lists source types for the four tiers. Columns 3, 4, 5, and 6 provide ranges of waste amount for sites with only one source, corresponding to HWQ scores at the tops of the columns. Column 7 provides formulas to obtain source waste quantity values at sites with multiple sources.

1. Identify each source type.
2. Examine all waste quantity data available for each source. Record constituent quantity and waste stream mass or volume. Record dimensions of each source.
3. Convert source measurements to appropriate units for each tier to be evaluated.
4. For each source, use the formulas in the last column of SI Table 1 to determine the waste quantity value for each tier that can be evaluated. Use the waste quantity value obtained from the highest tier as the quantity value for the source.
5. Sum the values assigned to each source to determine the total site waste quantity.
6. Assign HWQ score from SI Table 2 (HRS Table 2-6).

Note these exceptions to evaluate soil exposure pathway HWQ (See HRS Table 5-2):

- The divisor for the area (square feet) of a landfill is 34,000.
- The divisor for the area (square feet) of a pile is 34.
- Wet surface impoundments and tanks and non-drum containers are the only sources for which volume measurements are evaluated for the soil exposure pathway.

SI TABLE 2: HWQ SCORES FOR SITES

Site WQ Total	HWQ Score
0	0
1 ^a to 100	1 ^b
>100 to 10,000	100
>10,000 to 1 million	10,000
>1 million	1,000,000

^a If the WQ total is between 0 and 1, round it to 1.

^b If the hazardous constituent quantity data are not complete, assign the score of 10.

Ground Water Observed Release Substances Summary Table

On SI Table 4, list the hazardous substances associated with the site detected in groundwater samples for that aquifer. Include only those substances directly observed or with concentrations significantly greater than background levels. Obtain toxicity values from the Superfund Chemical Data Matrix (SCDM). Assign mobility value of 1 for all observed release substances regardless of the aquifer being evaluated. For each substance, multiply the toxicity by the mobility to obtain the toxicity/mobility factor value; enter the highest toxicity/mobility value for the aquifer in the space provided.

Ground Water Actual Contamination Targets Summary Table

If there is an observed release at a drinking water well, enter each hazardous substance meeting the requirements for an observed release by well and sample ID on SI Table 5 and record the detected concentration. Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For MCL and MCLG benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the population using the well as a Level I target. If these percentages are less than 100%, or are all N/A, evaluate the population using the well as a Level II target for that aquifer.

SAMPLE ID	HAZARDOUS SUBSTANCE	CONCENTRATION	BACKGROUND CONCENTRATION	TOXICITY/ MOBILITY	REFERENCES
HIGHEST TOXICITY/ MOBILITY					

SI TABLE 5: GROUND WATER ACTUAL CONTAMINATION TARGETS

Well ID: _____

Level I _____ Level II _____

Population Served _____

References _____

SAMPLE ID	HAZARDOUS SUBSTANCE	CONC. (µ/L)	BENCHMARK CONC. (MCL OR MCLG)	% OF BENCHMARK	CANCER RISK CONC.	% OF CANCER RISK CONC.	RfD	% OF RfD
HIGHEST PERCENT					SUM OF PERCENTS		SUM OF PERCENTS	

Well ID: _____

Level I _____ Level II _____

Population Served _____

References _____

SAMPLE ID	HAZARDOUS SUBSTANCE	CONC. (µ/L)	BENCHMARK CONC. (MCL OR MCLG)	% OF BENCHMARK	CANCER RISK CONC.	% OF CANCER RISK CONC.	RID	% OF RID
			HIGHEST PERCENT		SUM OF PERCENTS		SUM OF PERCENTS	

GROUND WATER PATHWAY GROUND WATER USE DESCRIPTION

Describe Ground Water Use within 4 miles of the Site:

Describe generalized stratigraphy, aquifers, municipal and private wells. References: 17, 18, 19, 20, 21

Muscogee County is located on the Fall Line between the Piedmont and Upper Coastal Plain geological regions. The Pine Mountain physiographic province of the Piedmont is located in the northern part of the county and the Fall Line Hills physiographic province of the Upper Coastal Plain is located in the southern part of the county (Ref. 17, pp.1, 2). The Fall Line is a boundary of bedrock geology, but can also be recognized from stream geomorphology. Upstream from the Fall Line, rivers and streams typically have very small floodplains and do not have well-developed meanders. Within a mile or so downstream of the Fall Line, rivers and streams typically have floodplains or marshes across which they flow, and within 3 or 4 miles they meander (Ref. 18, p.3).

The Piedmont is a region of moderate-to-high-grade metamorphic rocks such as schists, gneisses, and igneous rocks such as granite. Piedmont soils are commonly red due to the khandite-group clays and iron oxides present from the intense weathering of feldspar-rich igneous and metamorphic rock (Ref. 18, pp. 2, 3).

The Coastal Plain is a region of Cretaceous and Cenozoic sedimentary rocks and sediments. The strata near the Fall Line are underlain by igneous and metamorphic rocks like those of the Piedmont. The sedimentary rocks of the Coastal Plain partly consist of sediment eroded from the Piedmont and partly of limestones generated by marine organisms. The most economically significant mineral resource of the Coastal Plain is kaolin, a clay-rich rock that is mined in pits near the Fall Line (Ref. 18, pp. 3, 4).

Surficial aquifers are present throughout Georgia. In the Piedmont, surficial aquifers consist of soil, saprolite, stream alluvium, colluvium, and other surficial deposits. In the Coastal Plain, surficial aquifers consist of intermixed layers of sand, clay, and limestone. The most productive aquifers are in the Coastal Plain in the southern part of the state. Coastal Plain aquifers are generally confined except near their northern limits, where they crop out or are near the surface (Ref. 19, p. 1). The Cretaceous aquifer and aquifer systems are the major source of groundwater in east-central Georgia (Ref. 19, p. 2). The Providence aquifer underlies southwestern Georgia, and the Dublin, Midville, and Dublin-Midville aquifers are in east-central Georgia (Ref. 20, p. 1). Wells penetrating into the Cretaceous aquifers range from 30 to 750 feet in depth and yield 50 to 1,200 gallons per minute (Ref. 19, p. 2).

Municipal water is available to the majority of the Columbus, Georgia and Phenix City, Alabama area residents, and is provided by a surface water intake near the Oliver Lake Dam in the Chattahoochee River north of Columbus and upstream of the site. There are no known private groundwater wells within the 4-mile target distance (Ref. 21, p.1).

Show Calculations of Ground Water Drinking Water Populations for each Aquifer:

Provide apportionment calculations for blended supply systems.

State average number of persons per household: N/A

References: 21

Providence aquifer

There are no residents that are potential groundwater receptors located within 4 miles of Ashland (Ref. 21).

GROUND WATER PATHWAY WORKSHEET NOT EVALUATED

LIKELIHOOD OF RELEASE	SCORE	REFS
1. OBSERVED RELEASE: If sampling data or direct observation support a release to the aquifer, assign a score of 550. Record observed release substances on SI Table 4.		
2. POTENTIAL TO RELEASE: Depth to aquifer: <u>X</u> feet. If sampling data do not support a release to the aquifer, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Optionally evaluate potential to release according to HRS Section 3.	Not evaluated as no targets exist.	
LR =		

TARGETS

<p>Are any wells part of a blended system? Yes <u> </u> No <u> </u> If yes, attach a page to show apportionment calculations.</p> <p>3. ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates that any target drinking water well for the aquifer has been exposed to a hazardous substance from the site, evaluate the factor score for the number of people served (SI Table 5).</p> <p>Level I: <u> </u> people x 10 = <u> </u> Level II: <u> </u> people x 1 = <u> </u> Total = <u> </u></p>		
4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water wells for the aquifer or overlying aquifers that are not exposed to a hazardous substance from the site; record the population for each distance category in SI Table 6a or 6b. Sum the population scores and multiply by 0.1	0	Ref. 21
5. NEAREST WELL: Assign a score of 50 for any Level I Actual Contamination Targets for the aquifer or overlying aquifer. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Targets exist, assign the Nearest Well score from SI Table 6a or 6b. If no drinking water wells exist within 4 miles, assign 0.		
6. WELLHEAD PROTECTION AREA (WHPA): If any source lies within or above a WHPA for the aquifer, or if a ground water observed release has occurred within a WHPA, assign a score of 20; assign 5 if neither condition applies but a WHPA is within 4 miles; otherwise, assign 0.		
<p>7. RESOURCES: Assign a score of 5 if one or more ground water resource applies; assign 0 if none applies.</p> <p>ξ Irrigation (5-acre minimum) of commercial food crops or commercial forage crops.</p> <p>ξ Watering of commercial livestock</p> <p>ξ Ingredient in commercial food preparation</p> <p>ξ Supply for commercial aquaculture</p> <p>ξ Supply for major or designated water recreation area, excluding drinking water use</p>		
Sum of Targets T =	0	

SI TABLE 6 (FROM HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS

SI TABLE 6a: OTHER THAN KARST AQUIFERS

Distance from Site	Pop.	Nearest Well (Choose Highest)	Populations Served by Wells within Distance Category											Pop. Value	Refs.	
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000			1,000,000 to 3,000,000
0 to 1/4 mile	0	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	0	
>1/4 to 1/2 mile	0	18	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122	0	
>1/2 to 1 mile	0	9	1	5	17	52	167	523	1,669	5,224	16,684	52,239	166,835	522,385	0	
>1 to 2 miles	0	5	0.7	3	10	30	94	294	939	2,939	9,385	29,384	93,845	293,842	0	
>2 to 3 miles	0	3	0.5	2	7	21	68	212	678	2,122	6,778	21,222	67,777	212,219	0	
>3 to 4 miles	0	2	0.3	1	4	13	42	131	417	1,306	4,171	13,060	41,709	130,5969	0	
Nearest Well =			Sum =													

SI TABLE 6 (FROM HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUND WATER TARGET POPULATIONS

SI TABLE 6b: KARST AQUIFERS

Distance from Site	Pop.	Nearest Well (Choose Highest)	Populations Served by Wells within Distance Category												Pop. Value	Refs.
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000		
0 to 1/4 mile		20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455		
>1/4 to 1/2 mile		20	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122		
>1/2 to 1 mile		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
>1 to 2 miles		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
>2 to 3 miles		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
>3 to 4 miles		20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227		
Nearest Well =			Sum =													

GROUNDWATER PATHWAY WORKSHEET (concluded) **NOT EVALUATED**

LIKELIHOOD OF RELEASE	SCORE	REFS																						
8. If any Actual Contamination Targets exist for the aquifer or overlying aquifers, assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; if no Actual Contamination Targets exist, assign the hazardous waste quantity score calculated for sources available to migrate to groundwater.																								
9. Assign the highest groundwater toxicity/mobility value from SI Table 3 or 4.																								
10. Multiply the groundwater toxicity/mobility and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below: (from HRS Table 2-7): $100 \times 100 = 10,000$ <table border="1" data-bbox="348 758 855 1115"> <thead> <tr> <th>Product</th> <th>WC Score</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>>0 to <10</td><td>1</td></tr> <tr><td>10 to <100</td><td>2</td></tr> <tr><td>100 to <1,000</td><td>3</td></tr> <tr><td>1,000 to <10,000</td><td>6</td></tr> <tr><td>10,000 to <1E+05</td><td>10</td></tr> <tr><td>1E+05 to <1E+06</td><td>18</td></tr> <tr><td>1E+06 to <1E+07</td><td>32</td></tr> <tr><td>1E+07 to <1E+08</td><td>56</td></tr> <tr><td>1E+08 or greater</td><td>100</td></tr> </tbody> </table>	Product	WC Score	0	0	>0 to <10	1	10 to <100	2	100 to <1,000	3	1,000 to <10,000	6	10,000 to <1E+05	10	1E+05 to <1E+06	18	1E+06 to <1E+07	32	1E+07 to <1E+08	56	1E+08 or greater	100		
Product	WC Score																							
0	0																							
>0 to <10	1																							
10 to <100	2																							
100 to <1,000	3																							
1,000 to <10,000	6																							
10,000 to <1E+05	10																							
1E+05 to <1E+06	18																							
1E+06 to <1E+07	32																							
1E+07 to <1E+08	56																							
1E+08 or greater	100																							
WC =																								

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the groundwater pathway score for each aquifer. Select the highest aquifer score. If the pathway score is greater than 100, assign 100.

GROUNDWATER PATHWAY SCORE: $\frac{LR \times T \times WC}{82,500}$

LR =
T =
WC =

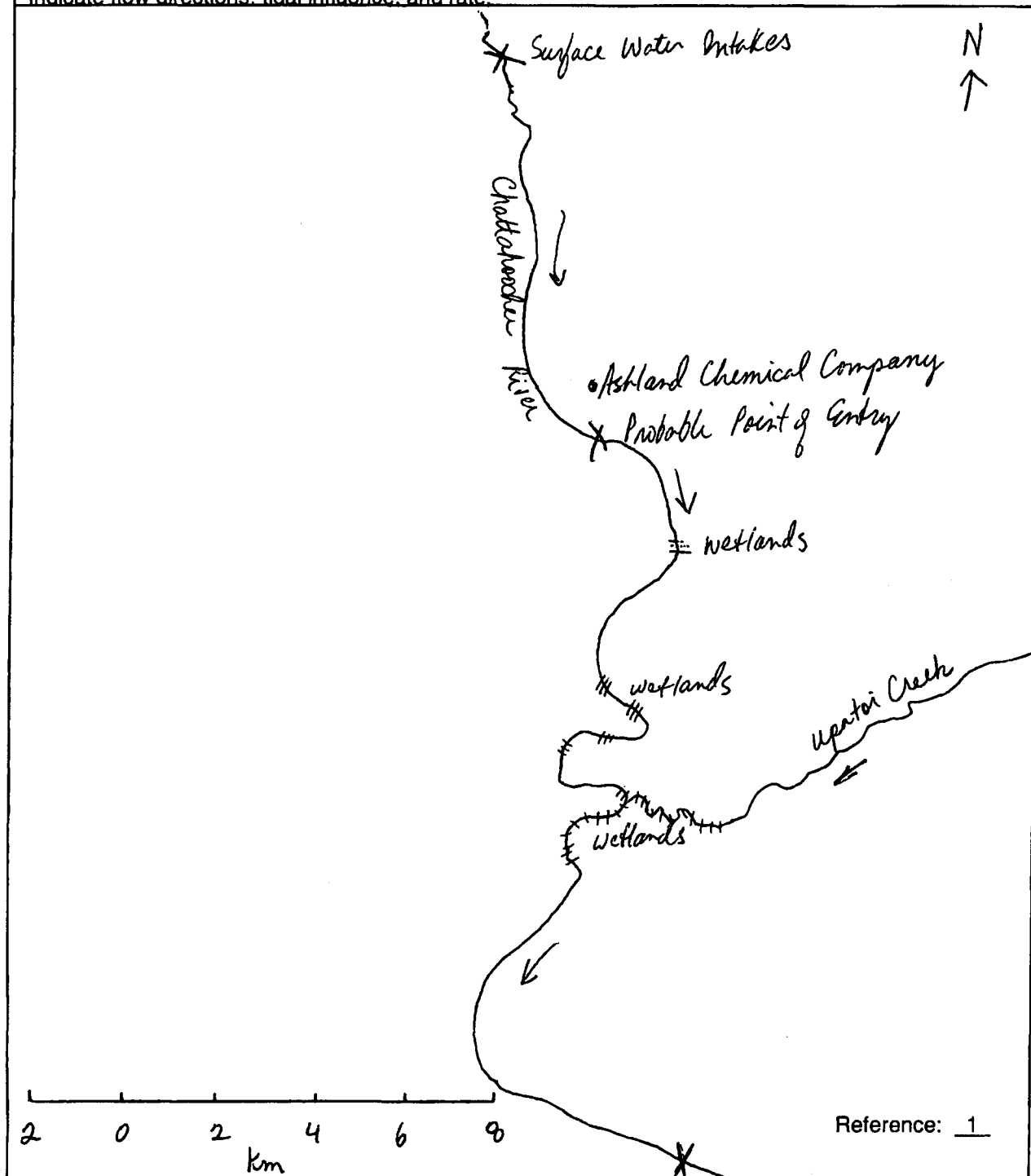
Max = 100

NOT EVALUATED

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Sketch of the Surface Water Migration Route:

Label all surface water bodies. Include runoff route and drainage direction, probable point of entry, and 15-mile target distance limit. Mark sample locations, intakes, fisheries, and sensitive environments. Indicate flow directions, tidal influence, and rate.



SURFACE WATER PATHWAY

Surface Water Observed Release Substances Summary Table

On SI Table 7, list the hazardous substances detected in samples for the watershed, which can be attributed to the site. Include only those substances in observed releases (direct observation) or with concentration levels significantly above background levels. Obtain toxicity, persistence, bioaccumulation potential, and ecotoxicity values from SCDM. Enter the highest toxicity/persistence, toxicity/persistence/bioaccumulation, and ecotoxicity/persistence/ecobioaccumulation values in the spaces provided.

- TP = Toxicity x Persistence
- TPB = TP x Bioaccumulation
- EP = Ecotoxicity x Persistence
- ETPB = EP x Bioaccumulation

Drinking Water Actual Contamination Targets Summary Table

For an observed release at or beyond a drinking water intake, on SI Table 8 enter each hazardous substance by sample ID and the detected concentration. For surface water sediment samples detecting a hazardous substance at or beyond an intake, evaluate the intake as Level II contamination. Obtain benchmark, cancer risk, and reference dose concentrations for each substance from SCDM. For MCL and MCLG benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages of the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the population served by the intake as a Level I target. If the percentages are less than 100%, or all are N/A, evaluate the population served by the intake as a Level II target.

[illegible]

SI TABLE 8: SURFACE WATER DRINKING WATER ACTUAL CONTAMINATION TARGETS

Intake ID: _____

Sample Type: _____

Level I _____ Level II _____

Population Served _____

References: _____

SAMPLE ID	HAZARDOUS SUBSTANCE	CONCENTRATION (µ/L)	BENCHMARK CONC. (MCL OR MCLG)	% OF BENCHMARK	CANCER RISK CONC.	% OF CANCER RISK CONC.	RfD	% OF RfD
			HIGHEST PERCENT		SUM OF PERCENTS		SUM OF PERCENTS	

Intake ID: _____ Sample Type: _____ Level I _____ Level II _____ Population Served _____ References: _____

SAMPLE ID	HAZARDOUS SUBSTANCE	CONCENTRATION (µ/L)	BENCHMARK CONC. (MCL OR MCLG)	% OF BENCHMARK	CANCER RISK CONC.	% OF CANCER RISK CONC.	RfD	% OF RfD
			HIGHEST PERCENT		SUM OF PERCENTS		SUM OF PERCENTS	

TABLE 4-1
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

<u>FACTOR CATEGORIES AND FACTORS</u>	<u>MAXIMUM VALUE</u>	<u>VALUE ASSIGNED</u>
DRINKING WATER THREAT <u>Likelihood of Release</u>		
1. Observed release	550	_____
2. Potential to release by Overland flow		
2a. Containment	10	_____
2b. Runoff	25	_____
2c. Distance to Surface Water	25	_____
2d. Potential to Release by Overland Flow (Lines 2a x [2b + 2c])	500	_____
3. Potential to Release by Flood	500	_____
3a. Containment (Flood)	10	_____
3b. Flood Frequency	50	_____
3c. Potential to Release by Flood (Lines 3a x 3b)	500	_____
4. Potential to Release (Lines 2d + 2c, subject to a maximum of 500)	500	_____
5. Likelihood of Release (Higher of lines 1 and 4)	550	_____

TABLE 4-2 – Containment Factor Values (see Supplemental Tables - if needed)

TABLE 4-3
DRAINAGE AREA VALUES

Drainage Area (acres)Assigned Value

Less than 50	1
50 to 250	2
>250 to 1,000	3
>1,000	4

TABLE 4-4
SOIL GROUP DESIGNATIONS

<u>Surface Soil Description</u>	<u>Soil Group Designation</u>
Coarse-textured soils with high infiltration rates (For example, sands, loamy sands)	A
Medium-textured soils with moderate infiltration rates (For example, sandy loams, loams)	B
Moderately fine-textured soils with low infiltration rates (For example, silty loams, silts, sandy clay loams)	C
Fine-textured soils with very low infiltration rates (For example, clays, sandy clays, silty clay loams, clay loams, silty clays); or impermeable surfaces (For example, pavement)	D

SURFACE WATER PATHWAY **CONFIDENTIAL**
LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET

**LIKELIHOOD OF RELEASE --
OVERLAND/FLOOD MIGRATION**

SCORE

REFS

<p>1. OBSERVED RELEASE: If sampling data or direct observation support a release to surface water in the watershed, assign a score of 550. Record observed release substances on SI Table 7</p>														
<p>2. POTENTIAL TO RELEASE: Distance to surface water: <u>4,500</u> (Feet). If sampling data do not support a release to surface water in the watershed, use the table below to assign a score from the table below based on distance to surface water and flood frequency.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <tr> <td style="padding: 2px;">Distance to surface water <2500 feet</td> <td style="padding: 2px; text-align: center;">500</td> </tr> <tr> <td style="padding: 2px;">Distance to surface water >2500 feet, and:</td> <td></td> </tr> <tr> <td style="padding: 2px;"> Site in annual or 10-yr floodplain</td> <td style="padding: 2px; text-align: center;">500</td> </tr> <tr> <td style="padding: 2px;"> Site in 100-yr floodplain</td> <td style="padding: 2px; text-align: center;">400</td> </tr> <tr> <td style="padding: 2px;"> Site in 500-yr floodplain</td> <td style="padding: 2px; text-align: center;">300</td> </tr> <tr> <td style="padding: 2px;"> Site outside 500-yr floodplain</td> <td style="padding: 2px; text-align: center;">100</td> </tr> </table> <p>Optionally, evaluate surface water potential to release according to HRS Section 4.1.2.1.2</p>	Distance to surface water <2500 feet	500	Distance to surface water >2500 feet, and:		Site in annual or 10-yr floodplain	500	Site in 100-yr floodplain	400	Site in 500-yr floodplain	300	Site outside 500-yr floodplain	100	500	Assumption is a worst-case scenario.
Distance to surface water <2500 feet	500													
Distance to surface water >2500 feet, and:														
Site in annual or 10-yr floodplain	500													
Site in 100-yr floodplain	400													
Site in 500-yr floodplain	300													
Site outside 500-yr floodplain	100													
LR =	500													

**LIKELIHOOD OF RELEASE --
GROUNDWATER TO SURFACE WATER MIGRATION**

SCORE

REFS

<p>1. OBSERVED RELEASE: If sampling data or direct observation support a release to surface water in the watershed, assign a score of 550. Record observed release substances on SI Table 7</p> <p>NOTE: Evaluate groundwater to surface water migration only for a surface water body that meets all of the following conditions:</p> <ol style="list-style-type: none"> 1. A portion of the surface water is within 1 mile of site sources having a containment factor greater than 0. 2. No aquifer discontinuity is established between the source and the above portion of the surface water body. 3. The top of the uppermost aquifer is at or above the bottom of the surface water. <p>Elevation of top of uppermost aquifer: _____</p> <p>Elevation of bottom of surface water body: _____</p>	NOT USED	
<p>2. POTENTIAL TO RELEASE: Use the ground water potential to release. Optionally, evaluate surface water potential to release according to HRS Section 3.1.2.</p>		
LR =		

**SURFACE WATER PATHWAY
LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET (CONTINUED)**

DRINKING WATER THREAT TARGETS

SCORE

REFS

<p>Record the water body type, flow, and number of people served by each drinking water intake within the target distance limit in the watershed. If there is no drinking water intake within the target distance limit, assign 0 to factors 3, 4, and 5.</p> <table border="1"> <thead> <tr> <th>Intake Name</th> <th>Water Body Type</th> <th>Flow</th> <th>People Served</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				Intake Name	Water Body Type	Flow	People Served																	<p>No surface water intakes are located along the 15-mile target distance limit</p>	<p>Refs. 1, 21</p>
Intake Name	Water Body Type	Flow	People Served																						
<p>Are any intakes part of a blended system? Yes _____ No _____ If yes, attach a page to show apportionment calculations.</p> <p>3. ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates a drinking water intake has been exposed to a hazardous substance from the site, list the intake name and evaluate the factor score for the drinking water population (SI Table 8).</p> <p>_____</p> <p>Level I: _____ people x 10 = _____ Level II: _____ people x 1 = _____ Total = _____</p>																									
<p>4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water intakes for the watershed that have not been exposed to a hazardous substance from the site. Assign the population values from SI Table 9. Sum the values and multiply by 0.1.</p>				<p>0</p>	<p>Ref. 21</p>																				
<p>5. NEAREST INTAKE: Assign a score of 50 for any Level I Actual Contamination Drinking Water Targets for the watershed. Assign a score of 45 if there are Level II targets for the watershed, but no Level I targets. If no Actual Contamination Drinking Water Targets exist, assign a score for the intake nearest the PPE from SI Table 9. If no drinking water intakes exist, assign 0.</p>				<p>0</p>	<p>Ref. 21</p>																				
<p>6. RESOURCES: Assign a score of 5 if one or more surface water resource applies; assign 0 if none applies.</p> <p>Irrigation (5 acre minimum) of commercial food or commercial forage crops Watering of commercial livestock Ingredient in commercial food preparation <u>Major or designated water recreation area, excluding drinking water use</u> Chattahoochee River</p>				<p>5</p>	<p>Refs. 1, 21</p>																				
<p>SUM OF TARGETS T =</p>				<p>5</p>																					

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SI TABLE 9 (FROM HRS TABLE 4-14): DILUTION-WEIGHTED POPULATION VALUES FOR POTENTIAL CONTAMINATION FOR SURFACE WATER MIGRATION PATHWAY

Type of Surface Water Body ^a	Pop.	Nearest Intake	Number of People ^a														Pop. Value
			0 to 1	1 to 10	11 to 30	31 to 100	101 to 300	301 to 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	3,000,001 to 10,000,000	
Minimal Stream (<10 cfs)		20	0	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	5,213,590	
Small to moderate stream (10 to 100 cfs)		2	0	0.4	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,245	521,359	
Moderate to large stream (>100 to 1,000 cfs)		0	0	0.04	0.2	0.5	2	5	16	52	163	521	1,633	5,214	16,325	52,136	
Large stream to river (>1,000 to 100,000 cfs)		0	0	0.004	0.02	0.05	0.2	0.5	2	5	16	52	163	521	1,632	5,214	
Large river (>10,000 to 100,000 cfs)		0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	2	5	16	52	163	521	
Very large river (>100,000 cfs)		0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	0.5	2	5	16	52	
Shallow ocean zone or Great Lake (Depth <20 feet)		0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	2	5	16	52	163	521	
Moderate ocean zone or Great Lake (Depth 20 to 200 feet)		0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	0.5	2	5	16	52	
Deep ocean zone or Great Lake (depth >200 feet)		0	0	0	0	0	0.001	0.003	0.008	0.03	0.08	0.3	1	3	8	26	
3-mile mixing zone in quiet flowing river (>10 cfs)		10	0	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227	2,606,795	
Nearest Intake =			Sum =														

^aRound the number of people to nearest integer. Do not round the assigned dilution-weighted population value to nearest integer.

^bTreat each lake as a separate type of water body and assign it a dilution-weighted population value using the surface water body type with the same dilution weight from Table 4-13 as the lake. If drinking water is withdrawn from coastal tidal water or the ocean, assign a dilution-weighted population value to it using the surface water body type with the same dilution weight from Table 4-13 as the coastal tidal water or the ocean zone.

References: _____

SURFACE WATER PATHWAY

Human Food Chain Actual Contamination Targets Summary Table

On SI Table 10, list the hazardous substances detected in sediment, aqueous, sessile benthic organism tissue, or fish tissue samples (taken from fish caught within the boundaries of the observed release) by sample ID and concentration. Evaluate fisheries within the boundaries of observed release detected by sediment or aqueous samples as Level II, if at least one observed release substance has a bioaccumulation potential factor value of 500 or greater (See SI Table 7). Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For FDAAL benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentage for the substances listed. If benchmark, cancer risk, or reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate this portion of the fishery as subject to Level I concentrations. If the percentages are less than 100% or all are N/A, evaluate the fishery as a Level II target.

Sensitive Environment Actual Contamination Targets Summary Table

On SI Table 11, list each hazardous substance detected in aqueous or sediment samples at or beyond wetlands or a surface water sensitive environment by sample ID. Record the concentration. If contaminated sediments or tissues are detected at or beyond a sensitive environment, evaluate the sensitive environment as Level II. Obtain benchmark concentrations from SCDM. For AWQC/AALAC benchmarks, determine the highest percentage of the benchmark of the substances detected in aqueous samples. If benchmark concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage equals or exceeds 100%, evaluate that part of the sensitive environment subject to Level I concentrations. If the percentage is less than 100%, or all are N/A, evaluate the sensitive environment as Level II.

Fishery ID: _____ Sample Type: _____ Level I _____ Level II _____

References: _____

Sample ID	Hazardous Substance	Concentration	Benchmark Concentration (FDAAL)	% of Benchmark	Cancer Risk Concentration	% of Cancer Risk Concentration	Reference Dose (RfD)	% of RfD
HIGHEST PERCENT					SUM OF PERCENTS		SUM OF PERCENTS	

Environment ID: _____ Sample Type: _____ Level I: _____ Level II: _____ Environment Value: _____

[illegible]

Environment ID: _____ Sample Type: _____ Level I _____ Level II _____ Environment Value: _____

[illegible]

SURFACE WATER PATHWAY (CONTINUED)

CONFIDENTIAL

HUMAN FOOD CHAIN THREAT TARGETS

SCORE

REFS

Record the water body type and flow for each fishery within the target distance limit. If there is no fishery within the target distance limit, assign a score of 0 at the bottom of this page.

Fishery Name Chattahoochee River Water Body River Flow 9,550 cfs

Species Bass Production Greater than zero

Species Catfish Production Greater than zero

Species Crappie Production Greater than zero

Fishery Name _____ Water Body _____ Flow _____

Species _____ Production _____

Species _____ Production _____

Fishery Name _____ Water Body _____ Flow _____

Species _____ Production _____

Species _____ Production _____

Refs. 1, 22,
24

FOOD CHAIN INDIVIDUAL

7. ACTUAL CONTAMINATION FISHERIES:

If analytical evidence indicates that a fishery has been exposed to a hazardous substance with a bioaccumulation factor greater than or equal to 500 (SI Table 10), assign a score of 50 if there is a Level I fishery. Assign a 45 if there is a Level II fishery, but no Level I fishery.

8. POTENTIAL CONTAMINATION FISHERIES:

If there is a release of a substance with a bioaccumulation factor greater than or equal to 500 to a watershed containing fisheries within the target distance limit, but there are no Level I or Level II fisheries, assign a score of 20.

If there is no observed release to the watershed, assign a value for the potential contamination fisheries from the table below using the lowest flow at all fisheries within the target distance limit:

LOWEST FLOW	FCI VALUE
< 10 cfs	20
10 to 100 cfs	2
> 100cfs, coastal tidal waters, oceans, or Great Lakes	0
3-mile mixing zone in quiet flowing river	10

Ref. 24

FCI VALUE =

0

SUM OF TARGETS T =

Food Chain

0

SURFACE WATER PATHWAY (CONTINUED)

CONFIDENTIAL

ENVIRONMENTAL THREAT WORKSHEET

When measuring length of wetlands that are located on both sides of a surface water body, sum both frontage lengths. For a sensitive environment that is more than one type, assign a value for each type.

ENVIRONMENTAL THREAT TARGETS

SCORE

REFS

Record the water body type and flow for each surface water sensitive environment within the target distance (See SI Table 12). If there is no sensitive environment within the target distance limit, assign a score of 0 at the bottom of the page.							
Environment Name Wetlands (4.3 miles)	Water Body Type Chattahoochee River	Flow 9,550 cfs	_____ cfs _____ cfs _____ cfs -				
9. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: If sampling data or direct observation indicate any sensitive environment has been exposed to a hazardous substance from the site, record this information on SI Table 11, and assign a factor value for the environment (SI Tables 13 and 14).							
Environment Name	Environment Type (SI Tables 13 & 14)	Environment Value	Multiplier 10 for level I 1 for Level II	Product			
Sum =							
10. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS:						0.015	Ref. 24, 25
Flow	Dilution Weight (SI Table 12)	Environment Type (SI Tables 13 & 14)	Environment Value	Potential Contaminant Multiplier	Product		
9,550 cfs	0.001	4.3 Miles of wetlands	150	0.1	0.015		
cfs				0.1			
cfs				0.1			
cfs				0.1			
Sum =						0.015	
ENVIRONMENTAL T =						0.015	

**SI TABLE 12 (HRS TABLE 4-13):
SURFACE WATER DILUTION WEIGHTS**

TYPE OF SURFACE WATER BODY		ASSIGNED DILUTION WEIGHT
DESCRIPTOR	FLOW CHARACTERISTICS	
Minimal stream	<10 cfs	1
Small to moderate stream	10 to 100 cfs	0.1
Moderate to large stream	>100 to 1,000 cfs	0.01
Large stream to river	>1,000 to 10,000 cfs	0.001
Large river	>10,000 to 100,000 cfs	0.0001
Very large river	>100,000 cfs	0.00001
Coastal tidal waters	Flow not applicable; depth not applicable	0.0001
Shallow ocean zone or Great Lake	Flow not applicable; depth less than 20 feet	0.0001
Moderate depth ocean or Great Lake	Flow not applicable; depth 20 to 200 feet	0.00001
Deep ocean zone or Great Lake	Flow not applicable; depth greater than 200 feet	0.000005
3-mile mixing zone in quiet flowing river	10 cfs or greater	0.5

**SI TABLE 13 (HRS TABLE 4-23):
SURFACE WATER AND AIR SENSITIVE ENVIRONMENTS VALUES**

SENSITIVE ENVIRONMENT	ASSIGNED VALUE
Critical habitat for Federal designated endangered or threatened species Marine Sanctuary National Park Designated Federal Wilderness Area Ecologically important areas identified under the Coastal Zone Wilderness Act Sensitive Areas identified under the National Estuary Program or Near Coastal Water Program of the Clean Water Act Critical Areas identified under the Clean Lakes Program of the Clean Water Act (subareas in lakes or entire small lakes) National Monument (air pathway only) National Seashore Recreation Area National Lakeshore Recreation Area	100
Habitat known to be used by Federal designated or proposed endangered or threatened species National Preserve National or State Wildlife Refuge Unit of Coastal Barrier Resources System Coastal Barrier (undeveloped) Federal land designated for the protection of natural ecosystems Administratively Proposed Federal Wilderness Area Spawning areas critical for the maintenance of fish/shellfish species within a river system, bay, or estuary Migratory pathways and feeding areas critical for the maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which the fish spend extended periods of time Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding National river reach designated as recreational	75
Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed) Federally designated Scenic or Wild River	50
State land designated for wildlife or game management State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities	25
State designated areas for the protection of maintenance of aquatic life under the Clean Water Act	5
Wetlands See SI Table 14 (Surface Water Pathway) or SI Table 23 (Air Pathway)	

**SI TABLE 14 (HRS TABLE 4-24):
SURFACE WATER WETLANDS FRONTAGE VALUES**

Total Length of Wetlands	Assigned Value
Less than 0.1 mile	0
0.1 to 1 mile	25
Greater than 1 to 2 miles	50
Greater than 2 to 3 miles	75
Greater than 3 to 4 miles	100
Greater than 4 to 8 miles	150
Greater than 8 to 12 miles	250
Greater than 12 to 16 miles	350
Greater than 16 to 20 miles	450
Greater than 20 miles	500

**SURFACE WATER PATHWAY (CONCLUDED)
WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY**

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**SURFACE WATER PATHWAY (CONCLUDED)
WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY**

WASTE CHARACTERISTICS**SCORE**

14. If an Actual Contamination Target (drinking water, human food chain, <u>or</u> environmental threat) exists for the watershed, assign the calculated hazardous waste quantity score, or a score of 100, whichever is greater.				10
15. Assign the highest value from SI Table 7 (observed release) or SI Table 3 (no observed release) for the hazardous substance waste characterization factors below. Multiply each by the surface water hazardous waste quantity score and determine the waste characteristics score for each threat.				
	Substance Value	HWQ	Product	WC score from Table below
Drinking Water Threat Toxicity/Persistence	400	10	4,000	(max = 100) 6
Food Chain Threat Toxicity/Persistence/Bioaccumulation	200,000	10	2,000,000	(max = 1,000) 32
Environmental Threat Ecotoxicity/Persistence/Ecobioaccumulation	20,000	10	200,000	(max = 1,000) 18
PRODUCT	WC SCORE			
0	0			
>0 to <10	1			
10 to <100	2			
100 to <1,000	3			
1,000 to <10,000	6			
10,000 to <1E + 05	10			
1E + 05 to <1E + 06	18			
1E + 06 to <1E + 07	32			
1E + 07 to <1E + 08	56			
1E + 08 to <1E + 09	100			
1E + 09 to <1E + 10	180			
1E + 10 to <1E + 11	320			
1E + 11 to <1E + 12	560			
1E + 12 or greater	1,000			

SURFACE WATER PATHWAY THREAT SCORES

Threat	Likelihood of Release (LR) Score	Targets (T) Score	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score $\frac{LR \times T \times WC}{82,500}$
Drinking Water	500	5	6	(max = 100) 0.18
Human Food Chain	500	0	32	(max = 100) 0
Environmental	500	0.015	18	(max = 60) 0.00164

SURFACE WATER PATHWAY SCORE

(DRINKING WATER THREAT + HUMAN FOOD CHAIN THREAT + ENVIRONMENTAL THREAT)

(max = 100)

0.18

SOIL EXPOSURE PATHWAY

If there is no observed contamination (e.g, ground water plume with no known surface source), do not evaluate the soil exposure pathway. Discuss evidence for no soil exposure pathway.

Soil Exposure Resident Population Targets Summary

For each property (duplicate page 35 as necessary):

If there is an area of observed contamination on the property and within 200 feet of a residence, school, or day care center, enter on Table 15 each hazardous substance by sample ID. Record the detected concentration. Obtain cancer risk, and reference dose concentrations from SCDM. Sum the cancer risk and reference dose percentages for the substance, enter N/A for the percentage. If the percentage sum calculated for cancer risk or reference dose equals or exceeds 100%, evaluate the residents and students as Level I. If both percentages are less than 100% or all are N/A, evaluate the targets as Level II.

Residence ID: _____ Level I _____ Level II _____ Population _____

[illegible]

Residence ID: _____ Level I _____ Level II _____ Population _____

Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk	RID	% of RID	Toxicity Value	References
HIGHEST PERCENT					SUM OF PERCENTS		SUM OF PERCENTS	

Residence ID: _____ Level I _____ Level II _____ Population _____

Sample ID	Hazardous Substance	Conc. (mg/kg)	Cancer Risk Concentration	% of Cancer Risk	RID	% of RID	Toxicity Value	References
HIGHEST PERCENT					SUM OF PERCENTS		SUM OF PERCENTS	

SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT

LIKELIHOOD OF EXPOSURE

	SCORE	DATA TYPE	REFS
1. OBSERVED CONTAMINATION: If evidence indicates presence of observed contamination (depth of 2 feet or less), assign a score of 550; otherwise, assign a 0. Note that a likelihood of exposure score of 0 results in a soil pathway score of 0.	550		*
LE =	550		

TARGETS

<p>2. RESIDENT POPULATION: Determine number of people living or attending school or daycare on a property with an area of observed contamination and whose residence, school, or day care center, respectively is on or within 200 feet of the area of observed contamination.</p> <p>Level I: _____ people x 10 = _____</p> <p>Level II: _____ people x 1 = _____ Sum= _____</p>															
<p>3. RESIDENT INDIVIDUAL: Assign a score of 50 if any Level I resident population exists. Assign a score of 45 if there are Level II targets but no Level I targets. IF no resident population exists (i.e. no Level I or Level II targets), assign 0 (HRS Section 5.1.3).</p>															
<p>4. WORKERS: Assign a score from the table below for the total number of workers at the site and nearby facilities with areas of observed contamination associated with the site.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Number of Workers</th><th style="width: 60%;">Score</th></tr> </thead> <tbody> <tr> <td>0</td><td>0</td></tr> <tr> <td>1 to 100</td><td>5</td></tr> <tr> <td>101 to 1,000</td><td>10</td></tr> <tr> <td>> 1,000</td><td>15</td></tr> </tbody> </table>	Number of Workers	Score	0	0	1 to 100	5	101 to 1,000	10	> 1,000	15					
Number of Workers	Score														
0	0														
1 to 100	5														
101 to 1,000	10														
> 1,000	15														
<p>5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value for each terrestrial sensitive environment (SI Table 16) in an area of observed contamination.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Terrestrial Sensitive Environment Type</th><th style="width: 60%;">Value</th></tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	Terrestrial Sensitive Environment Type	Value													
Terrestrial Sensitive Environment Type	Value														
<p>6. RESOURCES: Assign a score of 5 if any one or more of the following resources is present on an area of observed contamination at the site: assign 0 if none applies.</p> <p>☒ Commercial agriculture</p> <p>☒ Commercial silvaculture</p> <p>☒ Commercial livestock production or commercial livestock grazing</p>															
Total of Targets T =	0														

* Assumption of worst-case scenario considering the entire 2-acre site is contaminated.

**SI TABLE 16 (HRS TABLE 5-5): SOIL EXPOSURE PATHWAY
TERRESTRIAL SENSITIVE ENVIRONMENT VALUES**

TERRESTRIAL SENSITIVE ENVIRONMENT	ASSIGNED VALUE
Terrestrial critical habitat for Federal designated and endangered or threatened species National Park Designated Federal Wilderness Area National Monument	100
Terrestrial habitat known to be used by Federal designated or proposed threatened or endangered species National Preserve (terrestrial) National or State terrestrial Wildlife Refuge Federal land designated for protection of natural ecosystems Administratively proposed Federal Wilderness Area Terrestrial areas utilized by large or dense aggregations of animals (vertebrate species) for breeding	75
Terrestrial habitat used by State designated endangered or threatened species Terrestrial habitat used by species under review for Federal designated endangered or threatened status	50
State lands designated for wildlife or game management State designated Natural Areas Particular areas, relatively small in size, important to maintenance of unique biotic communities	25

SOIL EXPOSURE PATHWAY WORKSHEET NEARBY POPULATION THREAT

LIKELIHOOD OF EXPOSURE	SCORE	DATA TYPE	REF
7. Attractiveness/Accessibility (from SI Table 17 or HRS Table 5-6) Value: <u>10</u> Area of Contamination (from SI Table 18 or HRS Table 5-7) Value: <u>20</u> * Likelihood of Exposure (from SI Table 19 or HRS Table 5-8)	5		
LE =	5		

Note: if there is no area of observed contamination: LE = 0.

* Assumed worst-case scenario of 2 acres of contaminated soil.

TARGETS	SCORE	DATA TYPE	REF
8. Assign a score of 0 if Level I or Level II resident individual has been evaluated or if no individuals within 1/4 mile travel distance of an area of observed contamination. Assign a score of 1 if nearby population is within 1/4 mile travel distance and no Level I or Level II resident population has been evaluated.	1		Ref. 27
9. Determine the population within 1 mile travel distance that is not exposed to a hazardous substance from the site (i.e. properties that are not determined to be Level I or Level II); record the population for each distance category in SI Table 20 (HRS Table 5-10). Sum the population values and multiply by 0.1.	7.1		Ref. 13
T =	8.1		

**S1 TABLE 17 (HRS TABLE 5-6)
ATTRACTIVENESS/ACCESSIBILITY VALUES**

Area of Observed Contamination	Assigned Value
Designated recreational area	100
Regularly used for public recreation (for example, vacant lots in urban area)	75
Accessible and unique recreational area (for example, vacant lots in urban area)	75
Moderately accessible (may have some access improvements-for example, gravel road) with some public recreation use	50
Slightly accessible (for example, extremely rural area with no road improvement) with some public recreation use	25
Accessible with no public recreation use	10
Surrounded by maintained fence or combination of maintained fence and natural barriers	5
Physically inaccessible to public, with no evidence of public recreation use	0

**TABLE 18 (HRS TABLE 5-7): AREA OF CONTAMINATION FACTOR
VALUES**

Total area of the areas of observed contamination (square feet)	Assigned Value
≤ to 5,000	5
> 5,000 to 125,000 *	20
> 125,000 to 250,000	40
> 250,000 to 375, 000	60
>375,000 to 500,000	80
>500,000	100

* Since no soil samples have been collected, the entire 90,000 square feet of property was assumed contaminated to represent a worst-case scenario.

S1 TABLE 19 (HRS TABLE 5-8): NEARBY POPULATION LIKELIHOOD OF EXPOSURE FACTOR VALUES

AREA OF CONTAMINATION FACTOR VALUE	ATTRACTIVENESS/ACCESSIBILITY FACTOR VALUE									
	100	500	500	375	250	125	50	25	10	5
100										
80										
60										
40										
20										
5										

SI TABLE 20 (HRS TABLE 5-10): DISTANCE WEIGHTED POPULATION VALUES FOR NEARBY POPULATION THREAT

Travel Distance Category (miles)	Pop.	Number of people within the travel distance category										300,001 to 1,000,000	Pop. Value
		0	1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000		
Greater than 0 to 1/4	1,007	0	0.1	0.4	1.0	4	13	41	130	408	1,303	13,034	41
Greater than 1/4 to 1/2	1,762	0	0.05	0.2	0.7	2	7	20	65	204	652	6,517	20
Greater than 1/2 to 1	2,704	0	0.02	0.1	0.3	1	3	10	33	102	326	3,258	10
References: 13													SUM =
													71

SOIL EXPOSURE PATHWAY WORKSHEET (concluded)

WASTE CHARACTERISTICS

10. Assign the hazardous waste quantity score calculated for soil exposure (HRS Section 5.1.2.2 and HRS Table 5-2).		10
11. Assign the highest toxicity value for the soil exposure pathway (SI Table 3 or 15).		1,000
12. Multiply the toxicity and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below: Carbon tetrachloride, 1,1,2-Trichloroethane $10 \times 1,000 = 10,000$		
Product	WC Score	WC = 10
0	0	
>0 to < 10	1	
10 to <100	2	
100 to < 1,000	3	
1,000 to <10,000	6	
10,000 to < 1E + 05	10	
1E + 05 to < 1E + 06	18	
1E + 06 to < 1E + 07	32	
1E + 07 to < 1E + 08	56	
1E + 08 or greater	100	

RESIDENT POPULATION THREAT SCORE:

Likelihood of Exposure, Question 1;
(Targets = Sum of Questions 2,3,4,5,6)

$$\frac{LEX \times T \times WC}{82,500}$$

0

$$550 \times 0 \times 10 / 82,500 = 0$$

NEARBY POPULATION THREAT SCORE:

Likelihood of Exposure, Question 7;
(Targets = Sum of Questions 8,9)

$$\frac{LEX \times T \times WC}{82,500}$$

0.005

$$5 \times 8.1 \times 10 / 82,500 = 0.005$$

SOIL EXPOSURE PATHWAY SCORE:

Resident Population Threat + Nearby Population Threat

(Maximum of 100)
0.005

Score for the soil exposure pathway with an assumed observed contamination area (worst case).

AIR PATHWAY

Air Pathway observed Substances Summary Table

On SI Table 21, list the hazardous substances detected in air samples of a release from the site. Include only those substances with concentrations significantly greater than background levels. Obtain benchmark, cancer risk, and reference dose concentrations from SCDM. For NAAQS/NESHAPS benchmarks, determine the highest percentage of benchmark obtained for any substance. For cancer risk and reference dose, sum the percentages for the substances listed. If benchmark, cancer risk or, reference dose concentrations are not available for a particular substance, enter N/A for the percentage. If the highest benchmark percentage or the percentage sum calculated from which the sample was taken and any closer distance categories as Level I. If the percentages are less than 100% or all are N/A, evaluate targets in that distance category and any closer distance categories that are not Level I as Level II.

TABLE 21: AIR PATHWAY OBSERVED RELEASE SUBSTANCES

Sample ID:		Level I		Level II		Distance from Sources(mi)		References	
Hazardous Substance	Conc. ($\mu\text{g}/\text{m}^3$)	Gaseous Particulate	Benchmark Conc. (NAAQS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID	
Highest Toxicity/Mobility			Highest Percent		Sum of Percent		Sum of Percents		

Sample ID:		Level I		Level II		Distance from Sources(mi)		References	
Hazardous Substance	Conc. ($\mu\text{g}/\text{m}^3$)	Gaseous Particulate	Benchmark Conc. (NAAQS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID	
Highest Toxicity/Mobility			Highest Percent		Sum of Percents		Sum of Percents		

Sample ID:		Level I		Level II		Distance from Sources(mi)		References	
Hazardous Substance	Conc. ($\mu\text{g}/\text{m}^3$)	Gaseous Particulate	Benchmark Conc. (NAAQS or NESHAPS)	% of Benchmark	Cancer Risk Conc.	% of Cancer Risk Conc.	RID	% of RID	
Highest Toxicity/Mobility			Highest Percent		Sum of Percents		Sum of Percents		

AIR PATHWAY WORKSHEET

NOT EVALUATED

LIKELIHOOD OF RELEASE	SCORE	DATA TYPE	REFS
1. OBSERVED RELEASE: If sampling data or direct observation support a release to air, assign a score of 550. Record observed release substances on SI Table 21.			
2. POTENTIAL TO RELEASE: If sampling data do not support a release to air, assign as score of 500. Optionally, evaluate air migration gaseous and particulate potential to release (HRS Section 6.1.2).			
LR =			

TARGETS

3. ACTUAL CONTAMINATION POPULATION: Determine the number of people within the target distance limit subject to exposure from a release of a hazardous substance to the air. a) Level I: _____ people x 10 = _____ b) Level II: _____ people x 1 = _____ Total =			
4. POTENTIAL TARGET POPULATION: Determine the number people within the target distance limit not subject to exposure from a release of a hazardous substance to the air, and assign the total population score from SI Table 22. Sum the values and multiply the sum by 0.1.			
5. NEAREST INDIVIDUAL: Assign a score of 50 if there are any Level I targets. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Population exists, assign the Nearest Individual score from SI Table 22.			
6. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (SI Table 13) and wetland acreage values (SI Table 23) for environments subject to exposure from the release of a hazardous substance to the air.			
Sensitive Environment Type	Value		
Wetland Acreage	Value		
7. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS: Use SI Table 24 to evaluate sensitive environments not subject to exposure from a release.			
8. RESOURCES: Assign a score of 5 if one or more air resources apply within 1/2 mile of a source; assign a 0 if none applies. • Commercial agriculture • Commercial silviculture • Major or designated recreation area			
T =			

SI TABLE 22 (FROM HRS TABLE 6-17): VALUES FOR POTENTIAL CONTAMINATION AIR TARGET POPULATIONS

			Number of people within the distance category													
Distance From Site	Pop.	Nearest Individual (choose highest)	1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000		
On a source	0	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	Pop. Value	
0 to ¼ mile	0	*	1	4	13	41	131	408	1,304	4,081	13,034	40,812	130,340	408,114	0	
>¼ to ½ mile	0	2	0.2	0.9	3	9	28	88	282	822	2,815	8,815	28,153	88,153	0	
>½ to 1 mile	0	1	0.06	0.3	0.9	3	8	26	83	261	834	2,612	8,342	26,119	0	
>1 to 2 miles	0	0	0.02	0.09	0.3	0.8	3	8	27	83	266	833	2,659	8,326	0	
>2 to 3 miles	0	0	0.009	0.04	0.1	0.4	1	4	12	38	120	375	1,199	3,755	0	
>3 to 4 miles	0	0	0.005	0.02	0.07	0.2	0.7	2	7	28	73	229	730	2,285	0	
Nearest Individual =			Sum =													

References

* Score = 20 if the Nearest Individual is within 1/8 mile of a source; score = 7 if the Nearest Individual is between 1/8 and 1/4 mile of a source.

**SI TABLE 23 (HRS TABLE 6-18): AIR PATHWAY
VALUES FOR WETLAND AREA**

Wetland Area	Assigned Value
<1 acre	0
1 to 50 acres	25
>50 to 100 acres	75
>100 to 150 acres	125
>150 to 200 acres	175
>200 to 300 acres	250
>300 to 400 acres	350
>400 to 500 acres	450
>500 acres	500

**SI TABLE 24: DISTANCE WEIGHTS AND CALCULATIONS FOR
AIR PATHWAY POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS**

Distance	Distance Weight	Sensitive Environment Type and Value (from SI Table 13 and 23)	Product
On a source	0.10	x	
		x	
0 to ¼ mile	0.025	x	
		x	
¼ to ½ mile	0.0054	x	
		x	
½ to 1 mile	0.0016	x	
		x	
1 to 2 miles	0.0005	x	
		x	
2 to 3 miles	0.00023	x	
		x	
3 to 4 miles	0.00014	x	
		x	
>4 miles	0	x	
Total Environments Score =			

AIR PATHWAY (concluded)

WASTE CHARACTERISTICS

9. If any Actual Contamination Targets exist for the air pathway assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; if there are not Actual Contamination Targets for the air pathway, assign the calculated HWQ score for sources available to air migration.		
10. Assign the highest air toxicity/mobility value from SI Table 3 or 21		
11. Multiply the air pathway toxicity/mobility and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below:		
Product	WC Score	
0	0	
>0 to < 10	1	
10 to <100	2	
100 to <1,000	3	
1,000 to 10,000	6	
10,000 to 1E + 05	10	
1E + 05 to < 1E + 06	18	
1E + 06 to < 1E + 07	32	
1E + 07 to < 1E + 08	56	
1E + 08 or greater	100	

AIR PATHWAY SCORE:

LR x T x WC
82,500

(max = 100)

SITE SCORE CALCULATION	S	S ²
GROUND WATER PATHWAY SCORE (S _{GW})	0	0
SURFACE WATER PATHWAY SCORE (S _{SW})	0.18	0.0324
SOIL EXPOSURE (S _S)	0.005	0.000025
AIR PATHWAY SCORE (S _A)	0	0
Summed Values	0.185	0.032425
SITE SCORE $\sqrt{\frac{S_{GW}^2 + S_{SW}^2 + S_S^2 + S_A^2}{4}}$		0.09

COMMENTS

$$\text{SITE SCORE} = \sqrt{\frac{0 + 0.0324 + 0.000025 + 0}{4}}$$

$$\text{SITE SCORE} = \sqrt{\frac{0.032425}{4}}$$

$$\text{SITE SCORE} = \sqrt{0.0081}$$

$$\text{SITE SCORE} = 0.09$$

U . S . E P A R E G I O N I V

SDMS

Unscannable Material Target Sheet

DocID: 10086514 Site ID: GAD 059558601

Site Name: Ashland Chemical Co

Nature of Material:

Map: ✓

Computer Disks:

Photos:

CD-ROM:

Blueprints:

Oversized Report:

Slides:

Log Book:

Other (describe):

Amount of material: #1 Ref: 1

Please contact the appropriate Records Center to view the material.



Record of Telephone Conversation

Reference 2

Date: January 12, 2001
Time: 1405

Ashland Chemical Co.
Columbus, Muscogee Co., Georgia
EPA ID Number: GAD059558601

Organization:
T N & Assoc., Inc.,
Reg. 4 EPA STAT Contract
Name: Brenda J. Shaw
Signature: _____

Contacted:
Ms. Becky Weeks
Muscogee County Tax Assessor
5153 Willowbrook Dr.
706/653-4357

Subject: Property information for Ashland Chemical Company

Spoke with Ms. Becky Weeks regarding property ownership at 716 6th Street. Ms. Weeks said the platt address is 715 6th Street. Location is 300 x 300 ft lot and is currently owned by Central of Georgia Railroad Company (parent company Norfolk Southern Railway, 8 North Jefferson St., Roanoke, VA). No recent (last 10 years) changes of ownership were recorded. Lots east and west of site are also owned by Central of Georgia. Lot north of site owned by private individuals. Area is highly industrialized.

RESPONSE REQUIRED

☒ None ☐ Phone call ☐ Memo ☐ Letter ☐ Report

cc: ☒ File ☒ Project Manager ☐ Principal Investigator ☐ Other (specify) _____

Reference 3

[MSN Home](#) [Hotmail](#) [Web Search](#) [Shopping](#) [Money](#) [People & Chat](#)[Contr](#)**msn**

The foundation for Microsoft Windows 2000?

COM[Home](#) [Reference](#) [Homework](#) [College](#) [Courses](#) [Languages](#) [How-To](#) [Shop](#)**ENCARTA
REFERENCE****ENCARTA ENQUIRE**

Explore all of Encarta.com with our powerful search system.

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go[Advanced Find](#)[About](#)[Famous Places](#)[Image Info](#)Image Size: [Small](#) [Medium](#) [Large](#)Style: [Relief](#) [Topo](#) [Image](#)[Print](#)[Download](#)**Locator****Other Imagery:**[SPIN-2 Satellite Image](#)

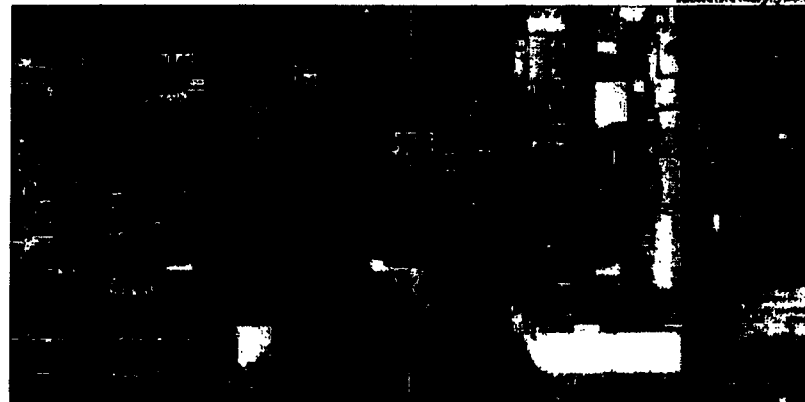
21 Feb 1998

[USGS Topo Map](#)

01 Jul 1973

[SPIN-2 Satellite Image](#)

21 Mar 1998

Encarta Articles:[Columbus \(Georgia\)](#)☆ [Phenix City](#)**Columbus, Georgia, United States 14 Jun 1995****Zoom** 2m **USGS**
United States Geological Survey

0 200M

0 200yd

Image courtesy of the US Geological Survey.

Identifies premium content available to Encarta subscribers.

Title NFRAP. REMEDIAL SITE ASSESSMENT DECISION,
PRELIMINARY ASSESSMENT FORM, WASTE MANAGEMENT
DATA SHEET, DATA, PROJECT NOTE.

Document Date 01-Jul-1994

Document ID 34465

Access Type UNCLASSIFIED

Operable Unit GAD059558601

Site Name ASHLAND CHEMICAL CO

Site ID GAD059558601

Pages 14

Image \34465\00000001.tif 14

VolumeID CD1

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IV

Page 1 of 1

EPA ID: GAD059558601 Site Name: ASHLAND CHEMICAL CO

State ID:

Alias Site Names: ASHLAND CHEMICAL CO

City: COLUMBUS

County or Parish: MUSCOGEE

State: GA

Refer to Report Dated: 06/19/1991

Report Type: PRELIMINARY ASSESSMENT 001

Report Developed by:

DECISION:

☒ 1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

☒ 1a. Site does not qualify for further remedial site assessment under CERCLA (No Further Remedial Action Planned - NFRAP)

☐ 1b. Site may qualify for action, but is deferred to:

☐ 2. Further Assessment Needed Under CERCLA:

2a. Priority: ☐ Higher ☐ Lower

2b. Other: (recommended action) NFRAP (No Further Remedial Action Planned)

DISCUSSION/RATIONALE:

This site was incorrectly coded as "deferred to RCRA". A file review was conducted in November 1999. As noted in the file, A "NFRAP" designation was given to the site on 6/19/91 by John McKeown citing that "no violations or spills have ever occurred at the site, hence no reason to further investigate the facility."

The "deferred to RCRA" code is hereby changed to "NFRAP."

Site Decision Made by: CAROLYN THOMPSON

Signature: 

Date: 11/30/99
07/01/1984

RECEIVED
JUL 09 1984

EPA		POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT				I. IDENTIFICATION	
		01 STATE		02 SITE NUMBER			
		GA		D059558601			
II. SITE NAME AND LOCATION							
01 SITE NAME (Legal, common, or descriptive name of site)				02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER			
Ashland Chemical Company				716 Sixth Street			
03 CITY		04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST	
Columbus		GA	31901	Muscogee	106	3	
09 COORDINATES LATITUDE		LONGITUDE					
32° 27' 26.0"		88° 45' 9.0"					
10 DIRECTIONS TO SITE (Starting from nearest public road)							
From the intersection of U.S. Hwy. 280/80 and U.S. Hwy 27 in Columbus, Georgia travel north on 27 to 6th Street. (2 blocks) turn right onto 6th Street and proceed east 1500 feet to site on the north (716 6th Street).							
III. RESPONSIBLE PARTIES							
01 OWNER (If known)				02 STREET (Business, mailing, residential)			
Ashland Oil Inc.				5200 Blazer Parkway			
03 CITY		04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER			
Dublin		OH	43017	(614) 889-3806			
07 OPERATOR (If known and different from owner)				08 STREET (Business, mailing, residential)			
Ashland Chemical Co.				P.O. Box 1456 716 Sixth Street			
09 CITY		10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER			
Columbus		GA	31902	(404) 327-3669			
13 TYPE OF OWNERSHIP (Check one)							
<input type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: _____ (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input checked="" type="checkbox"/> F. OTHER: <u>Corporate</u> (Specify) <input type="checkbox"/> G. UNKNOWN							
14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)							
<input checked="" type="checkbox"/> A. RCRA 3001 DATE RECEIVED: <u>11/12/80</u> MONTH DAY YEAR *Revised 12/1/82 <input type="checkbox"/> B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: _____ MONTH DAY YEAR <input type="checkbox"/> C. NONE							
IV. CHARACTERIZATION OF POTENTIAL HAZARD							
01 ON SITE INSPECTION				BY (Check all that apply)			
<input checked="" type="checkbox"/> YES DATE <u>8/3/83</u> MONTH DAY YEAR <input type="checkbox"/> NO				<input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input checked="" type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify)			
				CONTRACTOR NAME(S): _____			
02 SITE STATUS (Check one)				03 YEARS OF OPERATION			
<input checked="" type="checkbox"/> A. ACTIVE <input type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN				<u>1945</u> Beginning Year <u>Continuing</u> Ending Year <input type="checkbox"/> UNKNOWN			
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED							
Organics, solvents, inorganics and acids present on-site being used in various processes and quantities throughout years of operation. Wastes manifested to off-site disposal.							
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION (None) No on-site disposal. As noted on Data sheet (February 21, 1984) 500 gal. underground tank closed per E.P.D. in 1983. Drummed storage area being closed after approval of January 24, 1984 closure plan. No reported spills or releases.							
V. PRIORITY ASSESSMENT							
01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)							
<input type="checkbox"/> A. HIGH (Inspection required promptly) <input type="checkbox"/> B. MEDIUM (Inspection required) <input type="checkbox"/> C. LOW (Inspect on time available basis) <input checked="" type="checkbox"/> D. NONE (No further action needed, complete current disposition form)							
VI. INFORMATION AVAILABLE FROM							
01 CONTACT		02 OF (Agency/Organization)			03 TELEPHONE NUMBER		
David L. Anderson		Ashland Oil Chemical Division			(614) 889-3915		
04 PERSON RESPONSIBLE FOR ASSESSMENT		05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE		
Thomas M. Westbrook <i>TMW</i>		D.N.R.	E.P.D.	(404) 656-7404	<u>3/30/84</u> MONTH DAY YEAR		

[illegible]

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	2	ton/year	D001
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	7	Ton/year	D002, treated, T01, S01
BAS	BASES			
MES	HEAVY METALS			

[illegible]

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

From state files: (1) RCRA, Form C, Permit application
(2) RCRA, Part "A"
(3) EPA General Information Form
(4) Telephone Contact March 30, 1984

USES:CWM
Emelle, Alabama



POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ B. SURFACE WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ C. CONTAMINATION OF AIR

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ E. DIRECT CONTACT

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ F. CONTAMINATION OF SOIL

03 AREA POTENTIALLY AFFECTED: _____
(Acres)

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ G. DRINKING WATER CONTAMINATION

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ H. WORKER EXPOSURE/INJURY

03 WORKERS POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED

01 ☐ I. POPULATION EXPOSURE/INJURY

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

04 NARRATIVE DESCRIPTION

☐ POTENTIAL

☐ ALLEGED



**POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT**
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ K. DAMAGE TO FAUNA
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ L. CONTAMINATION OF FOOD CHAIN
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES
(Spills/runoff/standing liquids/leaking drums)

03 POPULATION POTENTIALLY AFFECTED: _____

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: _____)

☐ POTENTIAL

☐ ALLEGED

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

1949 11 24
1:50,000

85°00'
32°30'

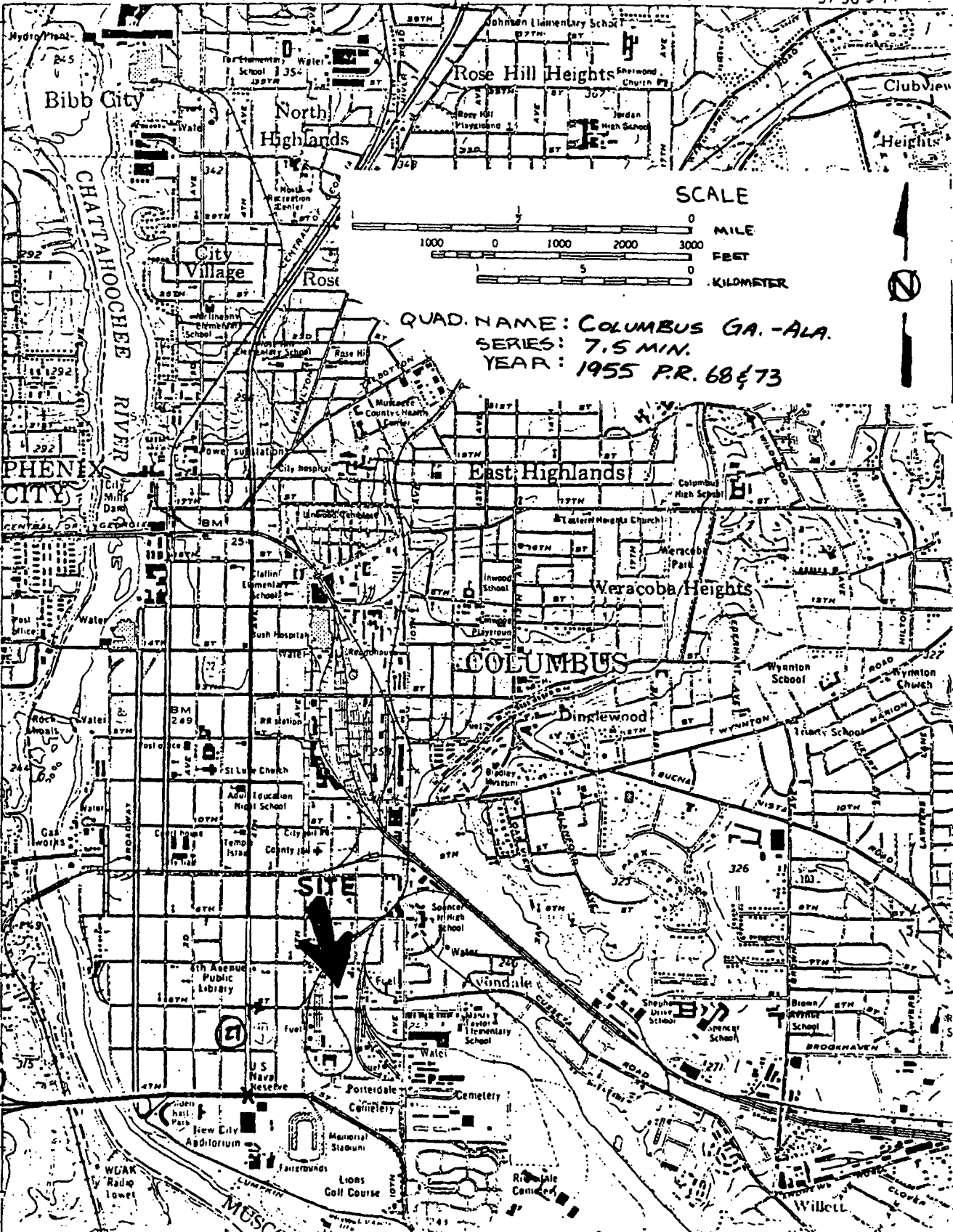
762,000 FEET (A.L.A.)

689,000m E.

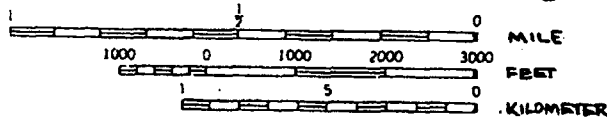
691

57°30'

3597000m. N.



SCALE



QUAD. NAME: COLUMBUS GA. - ALA.
SERIES: 7.5 MIN.
YEAR: 1955 P.R. 68 & 73

720,000 FEET
(A.L.A.)

27°30'

20
1780

PA - Ashland Chemical Company

GAD059558601

JUSTIFICATION FOR NO FURTHER ACTION

After a complete review of materials readily available in state files including:

- 1) EPA - Part "A"
- 2) EPA - RCRA, Form C
- 3) EPA - General Information Form

and, after completing conversations with the Information Contact and State Compliance Officer I believe no further action is required at Ashland Chemical Company, Columbus. At the present time the facility is a regulated storer and transporter. A 500 gallon storage tank has been closed under EPD authority and the drummed storage area is awaiting closure approval. No spills or releases have been reported by the facility. The facilities wastes, reportedly, have been re-claimed, recycled or treated during the life of the operation.

DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
WASTE MANAGEMENT DATA SHEET

RECEIVED

FEB 21 1984

MUNICIPAL SOLID WASTE

NAME AND LOCATION OF FACILITY
Ashland Chemical Co., Division Of Ashland Oil, Inc.
716 Sixth Street
Columbus, Georgia 31901

CAB 059558601

PERSON TO CONTACT

(ENTER THE NAME, ADDRESS, TITLE AND BUSINESS TELEPHONE NUMBER OF
THE PERSON TO CONTACT REGARDING INFORMATION SUBMITTED ON THIS FORM).

David L. Anderson, Environmental Engineer

(614) 889-3915

P. O. Box 2219

Columbus (Dublin), Ohio 43216

DATES OF WASTE HANDLING

(ENTER THE YEARS THAT YOU ESTIMATE WASTE TREATMENT, STORAGE OR DISPOSAL
BEGAN AND ENDED AT THE SITE. IF YOU SELECTED A FACILITY OFF-SITE PLEASE
NOTE AND EXPLAIN IN "COMMENTS" SECTION.

39 years of operation (some storage & treatment)

GENERAL TYPE OF WASTE

- | | |
|---------------------|------------------------------|
| 1- (X) ORGANICS | 7- () BASES |
| 2- (X) INORGANICS | 8- () PCB's |
| 3- (X) SOLVENTS | 9- () MIXED MUNICIPAL WASTE |
| 4- () PESTICIDES | 10- () UNKNOWN |
| 5- () HEAVY METALS | 11- () OTHER (SPECIFY) |
| 6- (X) ACIDS | |

WASTE QUANTITY (ESTIMATED)

(1) 500-gallon underground tank, (2) elementary neutralization unit -
600 gallons of an aqueous solution (pH adjusted) discharged to city sewer, and
(3) about 10 drums (550 gallons) per year of off-spec product or contaminated
solvents returned by customers.

HAS THERE EVER BEEN A SPILL OR DISCHARGE OF A HAZARDOUS SUBSTANCE FROM YOUR
FACILITY? (BRIEFLY EXPLAIN THE NATURE OF THE RELEASE).

None reported by the facility.

COMMENTS

(IF THERE IS ANY COMMENTS THAT YOU BELIEVE WOULD CLARIFY THE PAST WASTE HANDLING PRACTICES OF YOUR FACILITY OR OF FACILITIES YOU SELECTED TO HANDLE YOUR WASTE, PLEASE ELABORATE IN THE SPACE PROVIDED).

The 500-gallon underground tank was closed in accordance with Georgia hazardous waste regulations during May-July 1983. Also, a closure plan (January 24, 1984) is on file with the state to close drummed waste storage at the plant.

SIGNATURE AND TITLE David L. Anderson
NAME Environmental Engineer (614)889-3915
TELEPHONE

5200 Blazer Parkway
STREET

Dublin Ohio 43017
CITY STATE ZIP CODE

David L. Anderson 2/16/84
SIGNATURE DATE

REGION: 04

U. S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
DATA BASE UPDATED 8/2/12/23
T.1 - ERPIIS TURNAROUND DOCUMENT

PAGE: 62
RUN DATE: 8/2/12/23
RUN TIME: 16:20:45

SITE DATA

EPA ID NO.1 GAD059558601 SHEET 01

(ACTION : * - FOR DATA ENTRY USE ONLY)

SF 101 * * * * * SITE NAME: ASHLAND CHEM CO SOURCE: M SOURCE COUNTS (NOT UPDATABLE)
* * * * * STREET: 716 6TH ST CONG. DIST: 03 NOTIS: 0
* * * * * CITY: COLUMBUS ST: GA ZIP: 31901- SSI: 0
* * * * * CMTY NAME: MUSCOGEE CNTY CODE: 215 HDOMS: 1
* * * * * HRS DATE (YY/MM): * / * / * LATITUDE: 32/27/02.6 LONGITUDE: 084/59/00.5 COMPOSITE: 0
* * * * * RESPONSE TERMINATION (CHECK ONE IF APPLICABLE): PENDING * NO FURTHER ACTION * VOLUNTARY RESPONSE * OTHER: 0
* * * * * ENFORCEMENT DISPOSITION (CHECK ANY THAT APPLY): NO VIABLE RESPONSIBLE PARTY * ENFORCED RESPONSE * COST RECOVERY *

EVENTS

(ACTION - FOR DATE ENTRY USE ONLY)	EVENT TYPE	DATE (YY/MM) STARTED	DATE (YY/MM) COMPLETED	CONDUCTED BY EPA STATE RESP/PARTY OTHER	COUNTS
* * *	(X) SITE DISCOVERY (SD)		80/08		
* * *	PRELIMINARY ASSESSMENT (PA)				
* * *	SITE INVESTIGATION (SI)				
* * *	REMEDIAL ACTION (RA)				
* * *	REMOVAL ACTION (RV)				
* * *	ENFORCEMENT INVESTIGATION (EI)				
* * *	ADMINISTRATIVE ORDER (AO)				
* * *	JUDICIAL ACTION (JA)				

REGION: 114

U. S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
DATA BASE UPDATED 82/12/23
T-1 - ERNIS TURNAROUND DOCUMENT
EPA ID NO.: GA005958601 SHEET 02

PAGE: 63
RUN DATE: 82/12/23
RUN TIME: 10120195

SITE NAME: ASHLAND CHEM CO

ALIAS AND ALIAS LOCATION DATA

ALIAS (ACTION) * - FOR DATA ENTRY USE ONLY)

SEQ. NO.: * ALIAS NAME: * SOURCE: *

ALIAS LOCATION (ACTION) * - FOR DATA ENTRY USE ONLY)

CONTIGUOUS PORTION OF SITE: *

STREET: * CONG. DIST.: *

CITY: * ST: * ZIP: *

CNTY NAME: * CNTY CODE: *

LATITUDE: * / * LONGITUDE: * / *

ALIAS (ACTION) * - FOR DATA ENTRY USE ONLY)

SEQ. NO.: * ALIAS NAME: * SOURCE: *

ALIAS LOCATION (ACTION) * - FOR DATA ENTRY USE ONLY)

CONTIGUOUS PORTION OF SITE: *

STREET: * CONG. DIST.: *

CITY: * ST: * ZIP: *

CNTY NAME: * CNTY CODE: *

LATITUDE: * / * LONGITUDE: * / *

U. S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
DATA BASE UPDATED 82/12/23
T.1 - ERPS TURNAROUND DOCUMENT

PAGE: 64
RUN DATE: 82/12/23
RUN TIME: 16120145

EPA ID NO.: GAD059558601 SHEET 03

SIFT FALT: ASHLAR CLER CU

SITE CUMULATS

[illegible]

COMMENT

PART A- ON FILE

100

13

U. S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
DATA BASE UPDATED 82/12/23
T.1 - PRRIS TURNAROUND DOCUMENT

PAGE: 65
RUN DATE: 82/12/23
RUN TIME: 16120145

EPA ID NO.: GAD059558601 SHEET 04

SITE NAME: ASHLAND CREEK CO

REGIONAL ENTITIES

[illegible]

PROJECT NOTE

NO FURTHER REMEDIAL ACTION PLANNED (NFRAP)

Date:

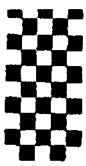
From: John A. McKeown
North Florida Project Officer
Site Assessment Section
347-5065

SUBJECT: Ashland Chemical Company
EPA ID No. GA0009558601

No further remedial action is planned for the aforementioned site by EPA. This decision was based on a thorough examination of the file material pertaining to the site. Justification for this recommendation is listed below:

No violation or spills have ever occurred at the site, hence no reason to further investigate the facility.


6/19/91



JAN-12-2001 15:46

P.01

Reference 5



Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

P.O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333

RECEIVED

FEB - 8 1983

ENGINEERING DEPARTMENT
R. O. Spooner
Director of Engineering

ENVIRONMENTAL PROTECTION DIVISION
LAND PROTECTION BRANCH

February 4, 1983

Medical Center Hospital
710 Center Street
Columbus, Georgia

Columbus Fire Department
205 10th Street
Columbus, Georgia

Columbus Police Department
937th 1st Avenue
Columbus, Georgia

Environmental Emergency Response Program
270 Washington, S.W.
Room 824
Atlanta, Georgia 30334

Subject: Contingency Plan And Emergency Procedures For:

Ashland Chemical Company
Division of Ashland Oil, Inc.

Plant is located at:

716 6th Street
Columbus, Georgia 31901

As required by the regulations under the Resource Conservation and Recovery Act of 1976 (RCRA) 40 CFR Part 265.83 of subpart D, we are submitting copies of this contingency plan to all local Police Department, Fire Department, hospitals, state and local Emergency Response Teams. In order to comply with this regulation, we have sent by Certified Mail, copies to the following agencies:

- (1) Environmental Emergency Response Program
- (2) Columbus Police Department
- (3) Columbus Fire Department
- (4) Medical Center Hospital

Any questions concerning this plan should be addressed to Ashland Chemical Company, 716 6th Street, Columbus, Georgia 31901, 404/327-3669.

Thank you for your cooperation.

Very truly yours,

John Hagler
District Manager

JH/dli

Post-It® Fax Note	7671	Date	1-12-01	# of pages	9
To	Brenda Shaw		From	Alicia Williams	
Co./Dept.			Co.		
Phone #			Phone #	404.657.8832	
Fax #	865.220.9050		Fax #		

Ref: Sec. 264.13 and 264.14, Waste Analysis Plan

The plant handles four categories of hazardous waste:

Plant Generated

1. Inadvertent product spillage and/or line flush due to loading/unloading and drumming operations for organic solvents which are collected in catch pans and stored in 55-gallon product drums. Chlorinated and non-chlorinated solvents are segregated. The drumming area also drains to a 500 gallon underground tank, but the tank is a backup to the catch pans.
2. Off-spec solvents returned to the plant by our customers. The off-spec material is due to blend formulation error.
3. Inadvertent product spillage due to loading/unloading and drumming operation for inorganic acids which are collected in an acid neutralization pit.

Customer Generated

4. Spent organic solvents and inorganic corrosives returned in 55-gallon product drums by customers.

Plant Generated

The recovered mixed solvents (Item 1) which are not beneficially reused, recycled, reclaimed, etc., are analyzed as required by the final T/S/D facility. The majority of individual solvents which might contribute to the mixture flash under 140°F PMCC. A PMCC flash point is taken to insure the chemical composition of the mixed solvents. Whenever the mixed solvents flash at less than 140°F the waste is classified as D001.

Off-spec solvents (Item 2) returned by customers usually will not be analyzed unless there is reason to believe that the customer's identification is in error. The majority of off-spec solvents are resold or reclaimed. However, for those off-spec solvents that must be sent to a T/S/D facility, material would be classified based upon 40 CFR 261.33. The customer's waste analysis and/or an outside lab's analysis would be employed to properly identify the off-spec solvent.

Acid wastes (Item 3) which are neutralized, pH checked, and pumped to a municipal sewer are exempt from RCRA. However, this waste would be classified as corrosive or D002 before it is neutralized. Corrosive products are handled and stored in a separate building than ignitable products and wastes.

Customer Waste (Item 4)

To assist customers with an economical and environmentally acceptable disposal, Ashland Chemical Company has entered into a business agreement with Chemical Waste Management. Before any spent solvent or corrosive is removed from a customer's plant the following steps must be accomplished.

1. A Waste Material Profile Sheet (WMPS) must be completed and signed by the customer.
2. A Certification of Representative Sample (CRS) form must be signed by the customer.
3. A 1000 ml sample of the spent solvent is collected for analysis.
4. The WMPS, CRS and representative sample are sent to:

Chemical Waste Management, Inc.
Technical Center
150 W. 137th Street
Riverdale, Illinois 60627

Attn: Chief Chemist

5. Based upon the analysis of the representative sample Chemical Waste Management can decide whether the spent solvent can be disposed of at one of its permitted T/S/D locations. The analysis also insures the waste/container compatability, and prevents incompatible wastes from being placed in a storage area.
6. The spent solvent is removed from the customer's plant if Chemical Waste Management agrees to dispose of the material. Either Ashland Chemical Company or Chemical Waste Management would remove the drummed waste.

THIS FORM HAS BEEN DEVELOPED BY AND FOR THE USE
OF CHEMICAL WASTE MANAGEMENT, INC AND OTHER
WASTE MANAGEMENT, INC COMPANIES



SALES

CODE

R 50270

WASTE PROFILE SHEET CODE

GENERATOR'S WASTE MATERIAL PROFILE SHEET

GENERAL DIRECTIONS. In order for us to determine whether we can lawfully, safely and environmentally transport, store, treat or dispose of your waste stream, we must ask certain information about your waste. All of the information we seek is necessary for our purposes and yours. Be complete in your answers. If your response is "none," so indicate. Answers must be in ink or typewritten. Information you provide will be maintained in strictest confidence. Please make a copy of this form for your records returning the original to the location indicated below.

THIS FORM AND ANY SUPPLEMENTAL INFORMATION SHOULD BE RETURNED TO

1 GENERATOR NAME _____

2 GENERATING FACILITY NAME ADDRESS/USEPA FACILITY I.D. NUMBER (IF ANY) _____

3 COMPANY CONTACTS

GENERAL _____

TITLE _____

PHONE _____

TECHNICAL _____

TITLE _____

PHONE _____

TITLE _____

PHONE _____

TITLE _____

PHONE _____

4 WASTE NAME _____

5 PROCESS GENERATING WASTE _____

6 WASTE CHARACTERISTICS

A PHASES LAYERS BILAYERED ☐ MULTILAYERED ☐ NONE ☐

B PHYSICAL STATE AT 70°F SOLID ☐ SEMI-SOLID ☐ LIQUID ☐
POWDER ☐ OTHER _____

C SOLIDS TOTAL (%) _____ TOTAL DISSOLVED (ppm or %): _____

D SPECIFIC WEIGHT (AS = PER UNIT) _____

E pH _____ (Show the following as range of %)

AS. H₂SO₄ _____ %

H₃PO₄ _____ %

HCl _____ %

NaOH _____ %

HF _____ %

NH₄OH _____ %

HNO₃ _____ %

Ca(OH)₂ _____ %

OTHER _____ %

_____ %

_____ %

F. FLASH POINT: _____ °F (CLOSED CUP TEST ONLY)

G. VAPOR PRESSURE (in mm of Hg at 25°C): _____

H. BTU PER # _____

ASH CONTENT _____ %

I. CHARACTERISTIC COLOR _____

DISTINCTIVE ODOR _____

J. HALOGENATED? _____ %

SULFONATED? _____ %

K. ALPHA RADIATION AS pCi/l: _____

7. WASTE COMPOSITION

A. ORGANIC COMPONENTS (WITH RANGES - INDICATE WHETHER % OR ppm)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(ATTACH ADDITIONAL PAGES IF NECESSARY)

DOES THIS WASTE CONTAIN ENDRIN, LINDANE, METHOXYCHLOR, TOXAPHENE, 2,4-D, 2,4,5-TPSILVEX, OR ANY OTHER ORGANIC COMPOUNDS LISTED BY USEPA AT 40 CFR 261.24? _____ IF SO, PLEASE NOTE ABOVE

B. HEAVY METALS (WITH ppm RANGES)

TOTAL	TOTAL LEACHABLE	TOTAL	TOTAL LEACHABLE
Ag _____	_____	Hg _____	_____
As _____	_____	Ni _____	_____
Ba _____	_____	Pb _____	_____
Co _____	_____	Se _____	_____
Cr _____	_____	Zn _____	_____
Cu _____	_____	Other (ATTACH ADDITIONAL PAGES)	

(IF YOU HAVE DETERMINED TOTAL LEACHABLES USING USEPA'S "EP TOXICITY TEST PROCEDURE" - AT 40 CFR PART 261, APPENDIX II - SO INDICATE BY MARKING "EP" AFTER THE RESULT SHOWN ABOVE)

C. INORGANIC COMPONENTS (WITH % RANGES)

TOTAL	TOTAL LEACHABLE	OTHER	TOTAL	TOTAL LEACHABLE
TOTAL CYANIDE _____ %	_____ %	_____	_____	_____ %
FREE CYANIDE _____ %	_____ %	_____	_____	_____ %
SULFIDE AS _____ %	_____ %	_____	_____	_____ %
BISULFITE AS _____ %	_____ %	_____	_____	_____ %
SULFITE AS _____ %	_____ %	_____	_____	_____ %

(ATTACH ADDITIONAL PAGES IF NECESSARY)

D. DOES THIS WASTE STREAM CONTAIN BIOLOGIC MATERIALS, PATHOGENS, OR ETIOLOGICAL AGENTS? _____ IF SO, ATTACH ADDITIONAL PAGES DESCRIBING SUCH MATERIALS

E. IS THE WASTE A PESTICIDE OR PRODUCED BY A PESTICIDE MANUFACTURING PROCESS? _____ IF SO, INDICATE WHETHER IT CONTAINS

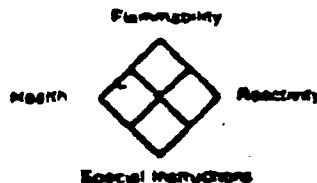
- ☐ ORGANOPHOSPHATES - CONTAINING SULFUR ☐ YES ☐ NO
☐ CARBAMATES
☐ CHLORINATED HYDROCARBONS

8. HAZARDOUS COMPONENTS AND CHARACTERISTICS

A. HAZARDOUS PROPERTIES (INSERT NUMBER CODES PER INSTRUCTIONS ON LAST PAGE)

(1) TOXICITY RATING. INHALATION _____ DERMAL _____ ORAL _____

(2) HAZARD IDENTIFICATION SYSTEM



B. LIST ANY OTHER ACUTE OR CHRONIC HAZARDS ASSOCIATED WITH OR ALLEGED TO BE ASSOCIATED WITH HUMAN CONTACT WITH OR EXPOSURE TO THE WASTE: _____

B. REGULATORY CLASSIFICATION OF WASTE

A. IS THIS WASTE A "HAZARDOUS MATERIAL" AS DEFINED BY REGULATIONS OF THE U.S. DEPARTMENT OF TRANSPORTATION PURSUANT TO THE HAZARDOUS MATERIALS TRANSPORTATION ACT? _____
 (SEE 49 CFR 172.101 AND 173 FOR "HAZARDOUS MATERIALS" LIST AND CHARACTERISTICS.) IF SO PLEASE ADVISE OF THE FOLLOWING

(1) CORRECT SHIPPING DESCRIPTION _____

(2) HAZARD CLASS(ES) _____

(3) MATERIAL I.D. NO.(S) _____

B. DOES THIS WASTE CONTAIN ANY "HAZARDOUS SUBSTANCE" AS DEFINED BY REGULATIONS OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT? _____
 (SEE 40 CFR 117 FOR "HAZARDOUS SUBSTANCES" AND CATEGORIES.) IF SO, PLEASE ADVISE OF THE FOLLOWING

(1) THE NAMES OF EACH HAZARDOUS SUBSTANCE PRESENT IN THE WASTE, THE HAZARD CATEGORY (A, B, C OR D) AND THE APPROXIMATE CONCENTRATION OF THE SUBSTANCE BY WEIGHT IN THE WASTE

(ATTACH ADDITIONAL PAGES IF NECESSARY)

C. IS THIS WASTE A "HAZARDOUS WASTE" AS DEFINED BY REGULATIONS OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY PURSUANT TO SECTION 3001 OF THE RESOURCE CONSERVATION AND RECOVERY ACT? _____ (SEE 40 CFR, PART 261 FOR WHAT IS A "HAZARDOUS WASTE") IF SO, STATE

(1) THE USEPA HAZARDOUS WASTE NUMBER(S) _____

(2) DO YOU CLAIM TO BE A SMALL QUANTITY GENERATOR? _____ (SEE 40 CFR 261.5)

D. IS THIS WASTE A "HAZARDOUS WASTE" AS DEFINED BY THE ENVIRONMENTAL REGULATORY AGENCY IN YOUR STATE? _____ IF SO STATE WHY IT IS SO DEFINED AND ANY STATE HAZARDOUS WASTE CODE NUMBERS ASSIGNED _____

10. IS THE INFORMATION PROVIDED IN SECTIONS 8-9 BASED UPON LABORATORY ANALYSIS OF THE WASTE MATERIAL? _____ IF SO PLEASE ADVISE OF THE DATE OF THE MOST RECENT ANALYSIS _____

11. HAVE YOU OBTAINED TOXICITY STUDIES OF THIS WASTE STREAM? _____ IF SO PLEASE ATTACH A COPY OF THE RESULTS _____

12. QUANTITY SHIPPING REQUIREMENTS

ANTICIPATED VOLUME IS _____

GALLONS ☐ TONS ☐ CUBIC YARDS ☐

PER DAY ☐ WEEK ☐ MONTH ☐

DRUMS ☐

OTHER ☐ _____

YEAR ☐

ONE TIME ☐

TRANSPORTATION EQUIPMENT REQUIRED _____

SERVICE SCHEDULING REQUIREMENTS _____

GENERATOR'S

AUTHORIZED SIGNATORY _____

TITLE _____

DATE _____

CONFIDENTIALITY AGREEMENT

In consideration for the Generator's release of the above information, and any other supplemental data provided, agrees to treat such information as confidential property and will not disclose such information to others except as is required by law, and in circumstances only after first giving notice to the Generator.

By _____

Name

Title

TOXICITY RATINGS

The designation is given to materials which fall into one of the following categories:

- (1) Materials which cause no harm under any conditions of use.

Materials which produce toxic effects on humans only under unusual conditions or by overdosage.

Slight Toxicity

(a) **Acute local:** Materials which on single exposures lasting seconds, minutes or hours cause only slight effects on the skin or mucous membranes regardless of the extent of the exposure.

(b) **Acute systemic:** Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slight effects following single exposures lasting seconds, minutes or hours, or following ingestion of a single dose, regardless of the quantity absorbed or the extent of exposure.

(c) **Chronic local:** Materials which on continuous or repeated exposures extending over periods of days, months or years cause only slight and usually reversible harm to the skin or mucous membranes. The extent of exposure may be great or small.

(d) **Chronic systemic:** Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slightly usually reversible effects following continuous or repeated exposures extending over days, months, or years. The extent of the exposure may be great or small.

In general, those substances classified as having "slight toxicity" produce changes in the human body which are readily reversible and which will disappear following termination of exposure either with or without medical treatment.

2 - Moderate Toxicity

(a) **Acute local:** Materials which on single exposure lasting seconds, minutes or hours cause moderate effects on the skin or mucous membranes. These effects may be the result of intense exposure for a matter of seconds or moderate exposure for a matter of hours.

(b) **Acute systemic:** Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce moderate effects following single exposures lasting seconds, minutes or hours, or following ingestion of a single dose.

(c) **Chronic local:** Materials which on continuous or repeated exposures extending over periods of days, months or years cause moderate harm to the skin or mucous membranes.

(d) **Chronic systemic:** Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce moderate effects following continuous or repeated exposures extending over periods of days, months or years.

Those substances classified as having "moderate toxicity" may produce irreversible as well as reversible changes in the human body. These changes are not of such severity as to threaten life or produce serious physical impairment.

3 - Severe Toxicity

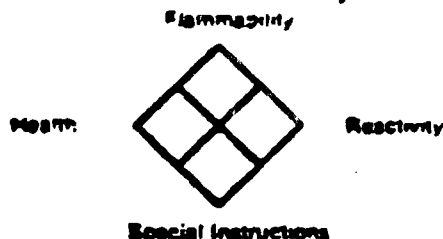
(a) **Acute local:** Materials which on single exposure lasting seconds or minutes cause injury to skin or mucous membranes of sufficient severity to threaten life or to cause permanent physical impairment or disfigurement.

(b) **Acute systemic:** Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which can cause injury of sufficient severity to threaten life following a single exposure lasting seconds, minutes or hours, or following ingestion of a single dose.

(c) **Chronic local:** Materials which on continuous or repeated exposures extending over periods of days, months or years can cause injury to skin or mucous membranes of sufficient severity to threaten life or cause permanent impairment, disfigurement or irreversible change.

(d) **Chronic systemic:** Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which can cause death or serious physical impairment following continuous or repeated exposures to small amounts extending over periods of days, months, or years.

Hazard Identification System



The above diagram identifies the "Health," "Flammability," and "Reactivity" (instability and water reactivity) of a chemical and indicates the order of severity of each hazard by use of one of five numerical gradings, from four (4), indicating the severe hazard or extreme danger, to zero (0), indicating no special hazard. In the diamond-shaped diagram "Health" hazard is identified at the left, "Flammability" at the top, and "Reactivity" at the right. The bottom space is primarily used to identify unusual reactivity with water. A W with a line through its center alerts fire fighting personnel to the possible hazard in use of water.

The bottom space may also be used to identify a radiation hazard by the symbol. Oxidizing chemicals are identified in the bottom space by OX.

To supplement the spatial arrangement NFPA No. 704M recommends the use of colored backgrounds or colored numbers to identify the hazard categories — blue for "Health," red for "Flammability," yellow for "Reactivity."

For a detailed description of the hazard identification system used here, see "Recommended System for the Identification of the Fire Hazards of Materials NFPA No. 704M 1969 Edition."

The following paragraphs summarize the meanings of the numbers in each hazard category and explain what a number should tell the fighting personnel about protecting themselves and how to fight fires where the hazard exists.

Health

4 A few breaths of the gas or vapor could cause death or the gas vapor or liquid could be fatal on penetrating the fire fighters' normal full protective clothing which is designed for resistance to heat. For most chemicals having a Health rating the normal full protective clothing available to the average fire department will not provide adequate protection against skin contact with these materials. Only special protective clothing designed to protect against the specific hazard should be worn.

3 Materials extremely hazardous to health but areas may be entered with extreme care. Full protective clothing including self-contained breathing apparatus, rubber gloves, boots and bands around legs, arms and wrist should be provided. No skin surface should be exposed.

2 Materials hazardous to health but areas may be entered freely with self-contained breathing apparatus.

1 Materials only slightly hazardous to health. It may be desirable to wear self-contained breathing apparatus.

0 Materials which on exposure under fire conditions would pose no health hazard beyond that of ordinary combustible materials.

Flammability

4 Very flammable gases, very volatile flammable liquids and materials that in the form of dusts or mists readily form explosive mixtures when dispersed in air. Shut off flow of gas or liquid and seal container, remove streams on exposed tanks or containers. Use water spray, carefully in the vicinity of dusts so as not to create dust clouds.

3 Liquids which can be ignited under almost normal temperature conditions. Water may be ineffective on these liquids because of the low flash points. Solids which form coarse dusts, solids in shredded or fibrous form that create flash fires, solids that burn rapidly, solids because they contain their own oxygen, and materials that ignite spontaneously at normal temperatures in air.

2 Liquids which must be moderately heated before ignition can occur and solids that readily give off flammable vapors. Water spray may be used to extinguish the fire because the materials can be cooled below its flash point.

1 Materials that must be preheated before ignition can occur. Water may cause frothing of liquids with this flammability rating number. If it gets below the surface of the liquid and turns to steam. However, water spray gently applied to the surface will cause a frothing which will extinguish the fire. Most combustible solids have a flammability rating of 1.

0 Materials that will not burn.

Reactivity

4 Materials which in themselves are readily capable of detonation or of explosive decomposition or of explosive reaction at normal temperatures and pressures. Includes materials which are sensitive to mechanical or localized thermal shock. If a chemical with this hazard rating is in an advanced or massive fire, the area should be evacuated.

3 Materials which in themselves are capable of detonation or of explosive decomposition or of explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. Includes materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without requiring heat or confinement. Fire fighting should be done from an explosion-resistant location.

2 Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Includes materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. Also includes those materials which may react violently with water or which may form potentially explosive mixtures with water or generates toxic gases, vapors or fumes when mixed with water in advanced or massive fires. Fire fighting should be done from a protected location.

1 Materials which in themselves are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently. Caution must be used in approaching the fire and applying water.

0 Materials which are normally stable even under fire exposure conditions and which are not reactive with water. Normal fire fighting procedures may be used.

SALES

CODE

WASTE PROFILE SHEET CODE

CERTIFICATION OF REPRESENTATIVE SAMPLE

GENERAL DIRECTIONS: IN ORDER TO DETERMINE WHETHER WE CAN ACCEPT THE SPECIAL WASTE DESCRIBED IN THE ABOVE NUMBERED PROFILE SHEET, WE MUST OBTAIN A REPRESENTATIVE SAMPLE OF THE WASTE. WE WILL ANALYZE THE SAMPLE TO VERIFY THE INFORMATION YOU HAVE PROVIDED US, SO IT IS PARTICULARLY IMPORTANT THAT THE SAMPLE BE TRULY REPRESENTATIVE. IN MOST CIRCUMSTANCES YOU WILL BE OBTAINING THE SAMPLE. HOWEVER, IN THOSE CASES IN WHICH WE OBTAIN THE SAMPLE, WE MUST ASK THAT ONE OF YOUR EMPLOYEES BE PRESENT TO DIRECT THE PARTICULAR SOURCE TO BE SAMPLED AND TO WITNESS THE SAMPLING. IN SUCH CASE, YOUR EMPLOYEE MUST SIGN THIS CERTIFICATION AS A WITNESS.

THIS CERTIFICATION MUST BE RETURNED, WITH THE REPRESENTATIVE WASTE SAMPLE, TO:

THE UNDERSIGNED CERTIFIES THAT HE/SHE OBTAINED A REPRESENTATIVE SAMPLE OF THE WASTE MATERIAL DESCRIBED IN THE "GENERATOR'S WASTE MATERIAL PROFILE SHEET" ABOVE REFERENCED, AND THAT THE FOLLOWING REPRESENTATIONS ARE TRUE AND CORRECT:

1. HOUR AND DATE OF SAMPLING: _____
2. SOURCE FROM WHICH SAMPLE TAKEN: _____
3. EQUIPMENT AND SAMPLING METHOD USED: _____
4. AMOUNT OF SAMPLE OBTAINED: _____
5. TYPE OF CONTAINER INTO WHICH SAMPLE WAS PLACED: _____
6. THE SAMPLING EQUIPMENT USED, AND THE CONTAINER INTO WHICH THE SAMPLE WAS PLACED, WERE THEMSELVES UNCONTAMINATED BEFORE USE.
7. AT THE TIME OF SAMPLING I AFFIXED A LABEL TO THE CONTAINER IN THE FOLLOWING FORM WITH THE FOLLOWING INFORMATION (FILL IN THIS PORTION, INCLUDING YOUR SIGNATURE, JUST AS IT APPEARS ON THE LABEL YOU PREPARED):

GENERATOR:
SAMPLE HOUR/DATE:
PROFILE SHEET CODE:
SAMPLER SIGNATURE:

WITNESS VERIFICATION. I WAS PERSONALLY PRESENT DURING THE SAMPLING DESCRIBED; I DIRECTED THE WASTE SOURCE TO BE SAMPLED; AND I VERIFIED THE INFORMATION ABOVE NOTED.

BY ASHLAND SALES PERSON

WITNESS: _____

SIGNATURE: _____

TITLE: _____

EMPLOYER: _____

DATE: _____

SAMPLER NAME: _____

SIGNATURE: _____

TITLE: _____

EMPLOYER: _____

DATE: _____

LABORATORY REVIEW OF SAMPLING PROTOCOL.

BASED UPON MY REVIEW OF THE ABOVE PROFILE SHEET, I CONCLUDE THAT THE ABOVE METHODOLOGY IS:

☐ ADEQUATE FOR YIELDING A REPRESENTATIVE SAMPLE

☐ INADEQUATE FOR THE REASONS NOTED HEREON.

DATE: _____

LAB MGR: _____

Record of Telephone Conversation

Reference 6

Date: January 17, 2001
Time: 1525

Ashland Chemical Co.
Columbus, Muscogee Co., Georgia
EPA ID Number: GAD059558601

Organization:
T N & Assoc., Inc.,
Reg. 4 EPA STAT Contract
Name: Brenda J. Shaw
Signature: _____

Contacted:
Mr. Paul Nipper
Business License Office
706/653-4092

Subject: Business license information for Ashland Chemical Company

Spoke with Mr. Paul Nipper regarding business license information for Ashland Chemical Company. His records show that in 1991, Ashland no longer maintained a business license at the site address.

RESPONSE REQUIRED

☒ None ☐ Phone call ☐ Memo ☐ Letter ☐ Report

cc: ☒ File ☒ Project Manager ☐ Principal Investigator ☐ Other (specify) _____

Record of Telephone Conversation

Reference 7

Date: January 12, 2001
Time: 1450

Ashland Chemical Company
Columbus, Muscogee Co., Georgia
EPA ID Number: GAD959558601

Organization:
T N & Assoc., Inc.
Reg. 4 EPA STAT Contract
Name: Brenda J. Shaw
Signature: _____

Contacted:
Ms. Althea Williams
GA EPD Haz. Waste Mgt. Div. (Records)
Generator Compliance Unit
4244 International Parkway
Atlanta, Ga. 30354
404-657-8831

Subject: Stare files and permits for Ashland Chemical Company

Spoke with Ms. Althea Williams regarding any RCRA permits that the GA Environmental Protection Division would have for Ashland if they generated hazardous waste. Ms. Crawford searched under both *Ashland Chemical Company* and *Ashland Oil, Inc.* She explained that the only RCRA permit information identified was for *Ashland Chemical Company*, and that the information was in archived hard copy form. An original RCRA permit was not located. A trip report dated July 18, 1984 documented closure of the underground storage tank and container storage area and indicated that the facility no longer generated hazardous wastes nor did they store off-site waste for longer than 10 days. Records dated September 17, 1984 indicated that a hazardous waste storage closure plan was formally approved, the RCRA permit was withdrawn, and the EPA ID # classified as inactive.

RESPONSE REQUIRED

☒ None ☐ Phone call ☐ Memo ☐ Letter ☐ Report

cc: ☒ File ☒ Project Manager ☐ Principal Investigator ☐ Other (specify) _____

Reference 0



CERCLIS Query Results

Consolidated facility information (from multiple EPA systems) was searched to select facilities

NAME: Beginning With: **GAD059558601**

Results are based on data extracted on JAN-08-2001

Total Number of Facilities Displayed: 0

Reference 9



ENVIROFACTS Query Results

[Map Facilities](#)

Please note that a maximum size of 100 facilities can be mapped!

EPA FACILITY ID: Beginning With: CAG039850001

LIST OF EPA-REGULATED FACILITIES IN ENVIROFACTS

To see a report on a facility click on the underlined Facility Name. Click on the underlined "View Facility Information" link to view EPA Facility information for the facility.

[Go To Bottom Of The Page](#)

<u>FACILITY NAME/ADDRESS</u>	<u>FACILITY INFORMATION</u>	<u>Permitted Discharge to Water?</u>	<u>Under Construction Report?</u>	<u>Hazardous Waste Manifest Report?</u>	<u>Active or Archived Surround Report?</u>	<u>Air Releases Reported?</u>	<u>ERS Reporter?</u>	<u>Risk Management Plan</u>
<u>ASHLAND CHEMICAL CO</u> 716 6TH ST COLUMBUS, GA 31901	View Facility Identification Information	NO	NO	YES	NO	NO	NO	NO

[Go To Top Of The Page](#)

Total Number of Facilities Displayed: 1



**ENVIROFACTS REPORT ON
ASHLAND CHEMICAL CO
716 6TH ST
COLUMBUS, GA 31901**

[Map this facility](#)

Map this facility using one of Envirofact's mapping utilities.

[EPA Facility Information](#)

This query was executed on 1AN-12-2001

RCRIS Information

HANDLER ID: GAD059558601

Standard Industrial Classification:

SIC CODE	SIC DESCRIPTION
2899	CHEMICALS AND CHEMICAL PREPARATIONS, NOT ELSEWHERE CLASSIFIED

This facility does not have a Handler/Facility Classification in the current RCRIS database.

Additional Information can be obtained from Resource Conservation and Recovery Information System Query.

[RCRIS](#)



Facility Information

[Report Error](#)

[Overview](#)
[EZ Query](#)
[Query](#)
[Model](#)
[Feedback](#)
[EF Home](#)

Facility Detail Report

Facility Name:	WIND C...
Location Address:	7 6 7 E ST
Supplemental Address:	
City Name:	COLUMBUS
State:	GA
County Name:	MUSCOGEE
ZIP/Postal Code:	31901
EPA Region:	4
Congressional District:	
Legislative District:	
HUC Code:	
Federal Facility:	No
Tribal Land:	No
Tribal Land Name:	
DUNS Company Number:	
Latitude:	32.6582
Longitude:	-84.25735
Method:	AIR CREAM MAPPING PROPOSE NUMBER
Accuracy (meters):	150
Reference Point Description:	PLANT ENTRANCE (GENERAL)

Report Facility Discrepancy

Map

Map this facility using one of Envirofacts's mapping utilities.

Environmental Interest Type

Environmental Interest Type	Information System	Information System ID	Data Source	Last Updated Date
RCRA				

Facility Mailing Addresses

Delivery Point	City Name	State Code	Postal Code	Information System
PO BOX 1456	COLUMBUS	GA	31902	RCRIS

NAIC Codes

No NAIC Codes returned.

SIC Codes

Source	SIC Code	Description	Primary	Report Discrepancy
RCRIS	2899	CHEMICALS AND CHEMICAL PREPARATIONS, NOT ELSEWHERE CLASSIFIED	PRIMARY	Report

Contacts

Affiliation Type	Full Name	Office Phone	Information System	Mailing Address	Report Discrepancy
NOTIFICATION DATA	DAVID ANDERSON	6148893915	RCRIS	View	Report
PART A DATA	DAVID ANDERSON	6148893915	RCRIS	View	Report

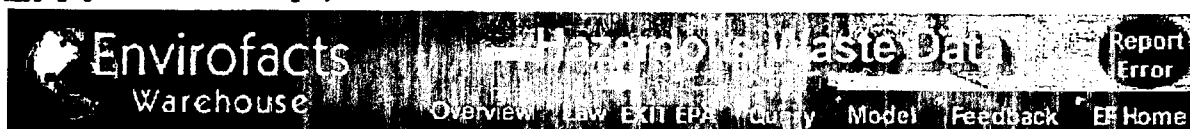
Organizations

Affiliation Type	Name	DUNS Number	Information System	Mailing Address	Report Discrepancy
CURRENT OPERATOR	OPERNAME		RCRIS	View	Report
CURRENT OWNER	OWNERNAME		RCRIS	View	Report

Alternative Names

Alternative Name	Alternative Name Type	Source	Date Reported
ASHLAND CHEMICAL CO		RCRIS	

Query executed on: JAN-12-2001



RCRIS Query Results

HANDLER ID: Equal To: **GAD059558601**

Results are based on data extracted on JUN-22-2000

Note: Click on the underlined **REF ID** to view the corresponding environmental web pages. Click on the underlined **MAPPING INFO** to view the mapping information. Click on the underlined **FACILITY ID** value to view EPA Facility Information.

[Go To Bottom Of The Page](#)

HANDLER NAME:	ASHLAND CHEMICAL CO	HANDLER ID:	GAD059558601
STREET:	716 6TH ST	FACILITY ID:	GAD059558601
CITY:	COLUMBUS	CORPORATE LINK:	No
STATE:	GA	COUNTY:	MUSCOGEE
ZIP CODE:	31901	MAPPING INFO:	NA
EPA REGION:	4		

Contact Information

Name	Street	City	State	ZIP Code	Phone	Type of Information
ANDERSON DAVID	PO BOX 1456	COLUMBUS	GA	31902	(614) 889-3915	Part A Data - Core
ANDERSON DAVID	PO BOX 1456	COLUMBUS	GA	31902	(614) 889-3915	Notification Data - Core

No handler/facility classification information available for the facility listed above.

[Go To Top Of The Page](#)

Total Number of Facilities Displayed: 1



Facility Location Information

ASHLAND CHEMICAL CO

EPA Facility ID: GAD059558601

Latitude: 32.456782 Longitude: -84.983155

LEGEND

- Facility location
 - Discharges to water
 - Superfund sites
 - Hazardous waste
 - Toxic releases
 - Air releases
 - Others
 - Multiple
 - Streets
 - Water Bodies
 - Counties
- * Color of denotes type of facility.

The latitude and longitude coordinates above come from the Envirofacts Locational Reference Tables (LRT). The method used to derive the Most Accurate Coordinates was **ADDRESS MATCHING-HOUSE NUMBER**. These coordinates correspond to the **PLANT ENTRANCE (GENERAL)** location and represent the best location for the facility. The coordinates were obtained from **CONTRACTED**.

Use EnviroMapper to immediately generate a "live" map of this facility.



Use SiteInfo to map all the facilities surrounding this latitude/longitude and to produce a cumulative report on demographic and safe drinking water information.



Facility Location Information

<u>Program System</u>	<u>Program System ID</u>	<u>Default Map Value</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Map Coordinate</u>	<u>Horizontal Collection Method</u>	<u>Horizontal Accuracy Measure</u>	<u>Reference Point</u>	<u>Horizontal Reference Data</u>
RCRIS	GAD059558601	Y	32.456782	-84.983155	<u>Yes</u>	ADDRESS MATCHING-HOUSE NUMBER	150	PLANT ENTRANCE (GENERAL)	NAI

Query executed on 12-JAN-2002

U.S. Environmental Protection Agency

EnviroMapper

[Home](#)
[Envirofacts](#)
[Feedback](#)

Map Features

☐ ☒ ☐

Discharges to water

☐ ☒ ☐

Superfund sites

☐ ☒ ☐

Hazardous waste

☐ ☒ ☐

Toxic releases

☐ ☒ ☐ Air

releases

☐ ☒ ☐

Others

☐ ☒ ☐

Multiple

☐ ☐ ☐

Schools

☐ ☐ ☐

Hospitals

☐ ☐ ☐

Churches

☐ ☐ ☐

Populated Places

☐ ☒ ☐

Streets

☐ ☐ ☐

Streams

☐ ☒ ☐

Water Bodies

☐ ☐ ☐

Zipcodes

☐ ☒ ☐

Counties

☐ ☐ ☐

Redraw Map

2.3 mi across. Tips: Click on the map or choose another option.

Locator Map

Zoom-In By:

☒ 2X ☐ Radius

Zoom-Out By:

☐ 2X ☐ Recenter Map

☐ Identify

☐ Show Location

☒ Locator Map

[Zoom Reset](#)


[Click on compass to pan map](#)

[Printable Map](#)


[For best output click here](#)

[On-Line Help](#)

You can also zoom in by geography.



United States
Environmental Protection Agency



Home

Map Features

☐ ☒ ☐

Discharges to water

☐ ☒ ☐

Superfund sites

☐ ☒ ☐

Hazardous waste

☐ ☒ ☐

Toxic releases

☐ ☒ ☐ Air releases

Others

☐ ☒ ☐ Multiple

Schools

☐ ☐ ☒

Hospitals

☐ ☐ ☒

Churches

☐ ☐ ☒

Populated Places

☐ ☒ ☐

Streets

☐ ☐ ☒

Streams

☐ ☒ ☐

Water Bodies

☐ ☐ ☒

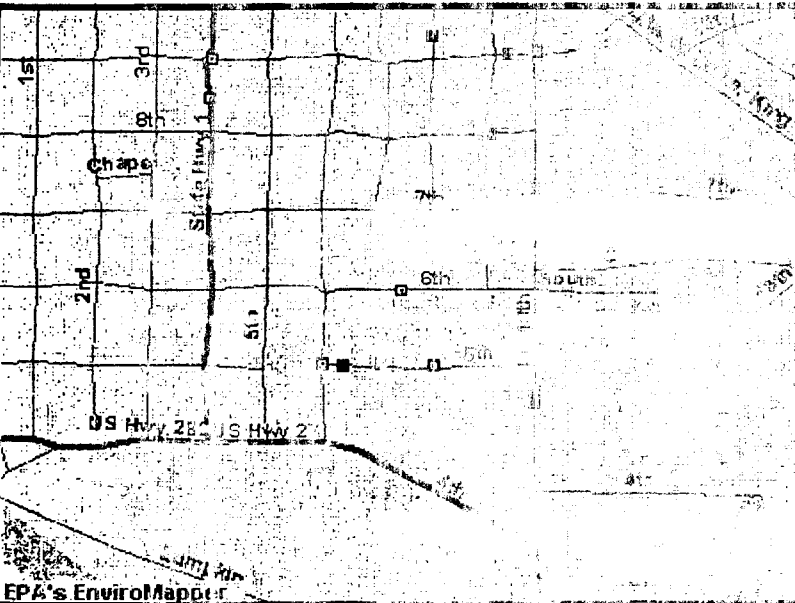
Zipcodes

☐ ☒ ☐

Counties

☐ ☒ ☐

Redraw Map



1.1 mi across. Tips: Click on the map or choose another region.

☒ Locator Map

Zoom Reset

Zoom by:

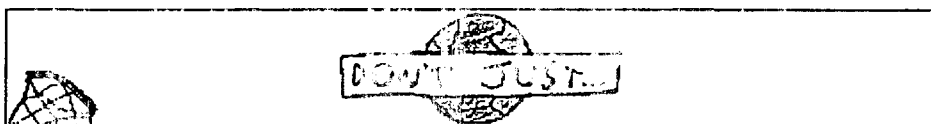
Click on compass to pan map

Printable Map

For best output click here

You can also zoom in by geography.

Reference 10


[weatherbase](#) [HOME](#) [ABOUT](#) [FAQ](#) [CONTACT](#) [GLOSSARY](#) [ABOUT](#)

Summary All Data

°F °C

Columbus, Georgia

Elevation: 449 feet Latitude: 32 31N Longitude: 084 57W

**Average Temperature**

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F 65	47	50	57	65	72	79	82	81	76	66	56	49

Average High Temperature

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F 76	57	61	69	77	84	90	91	91	86	77	67	59

Average Low Temperature

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F 54	36	38	45	52	61	68	71	71	66	54	44	38

Highest Recorded Temperature

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F 104	83	83	89	93	97	104	104	103	100	96	86	82

Lowest Recorded Temperature

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F -2	-2	11	16	28	39	44	59	57	38	24	10	4

Average Precipitation

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
in. 50.3	4.3	4.7	5.8	4.2	4	5.8	5.7	4	3.2	2.3	3.6	4.7

Average Snowfall

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
in. 0.5	0.1	0.3	0.1	---	---	---	---	---	---	---	---	---

Average Number of Clear Days

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 110	8	8	9	10	9	8	6	8	10	14	12	9

Average Number of Cloudy Days

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 151	17	14	15	11	12	10	12	10	11	10	12	16

Average Number of Partly Cloudy Days

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 104	6	6	7	9	10	12	13	13	9	7	6	6

Average Number of Rainy Days

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 110	10	10	10	8	8	9	13	10	8	5	8	10

Average Number of Days Above 90F/32C

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 76	---	---	---	---	6	17	21	21	10	1	---	---

Average Number of Days Above 70F/21C

Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 248	4	7	15	25	30	30	31	31	29	26	14	5

Average Number of Days Below 32F/0C

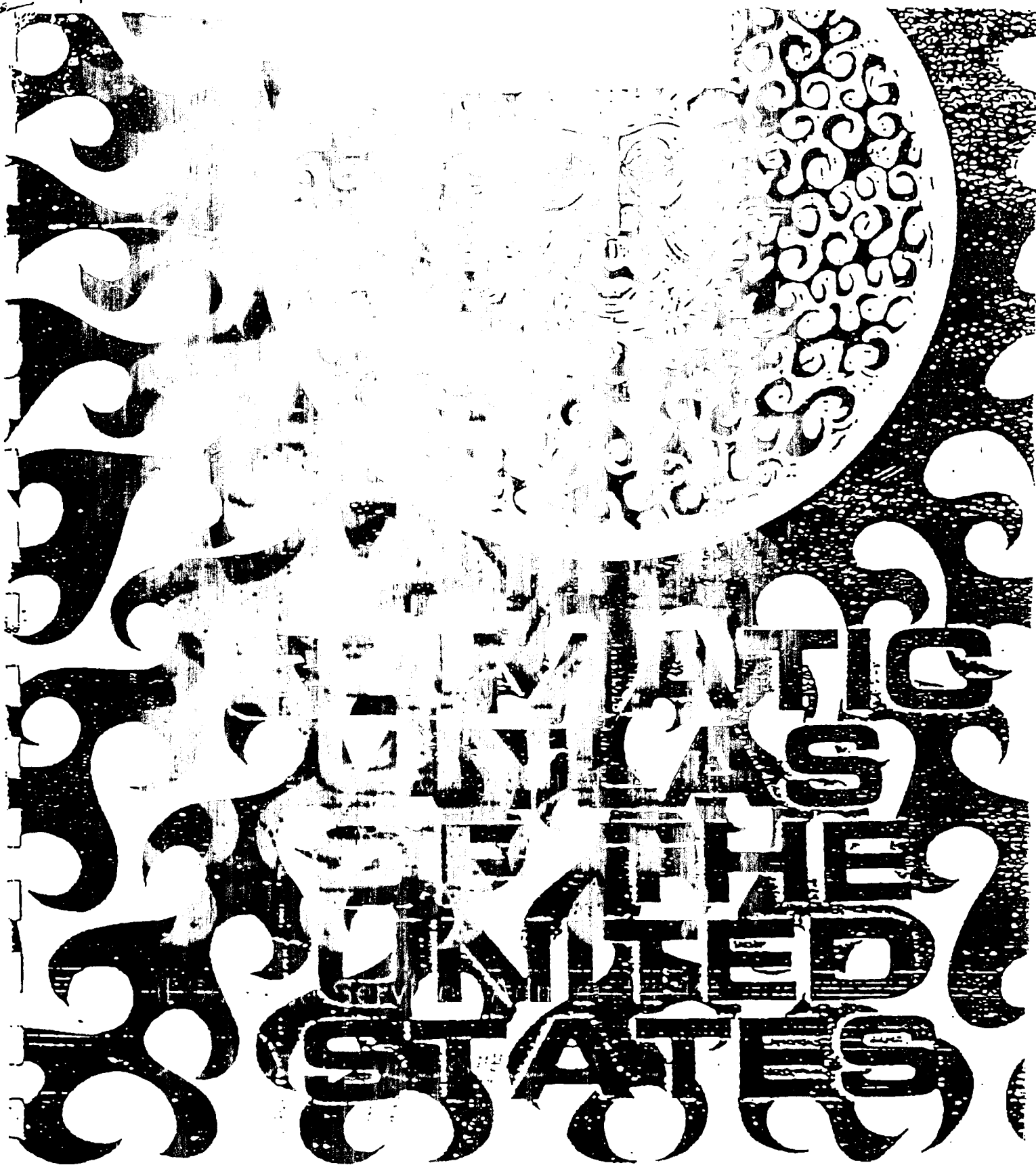
Years on Record: 48

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Days 42	13	9	4	---	---	---	---	---	---	---	5	11

Georgia: More On The WebWeather Forecasts: [My AOL.COM Weather](#) [The Weather Channel](#) [Weather For Kids](#)Travel Resources: [Fodors Travel Guides](#) [TravelFile Profile](#)

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Webmaster:

Reference 11



Environmental Science Services Administration . Environment

LAKE EVAPORATION

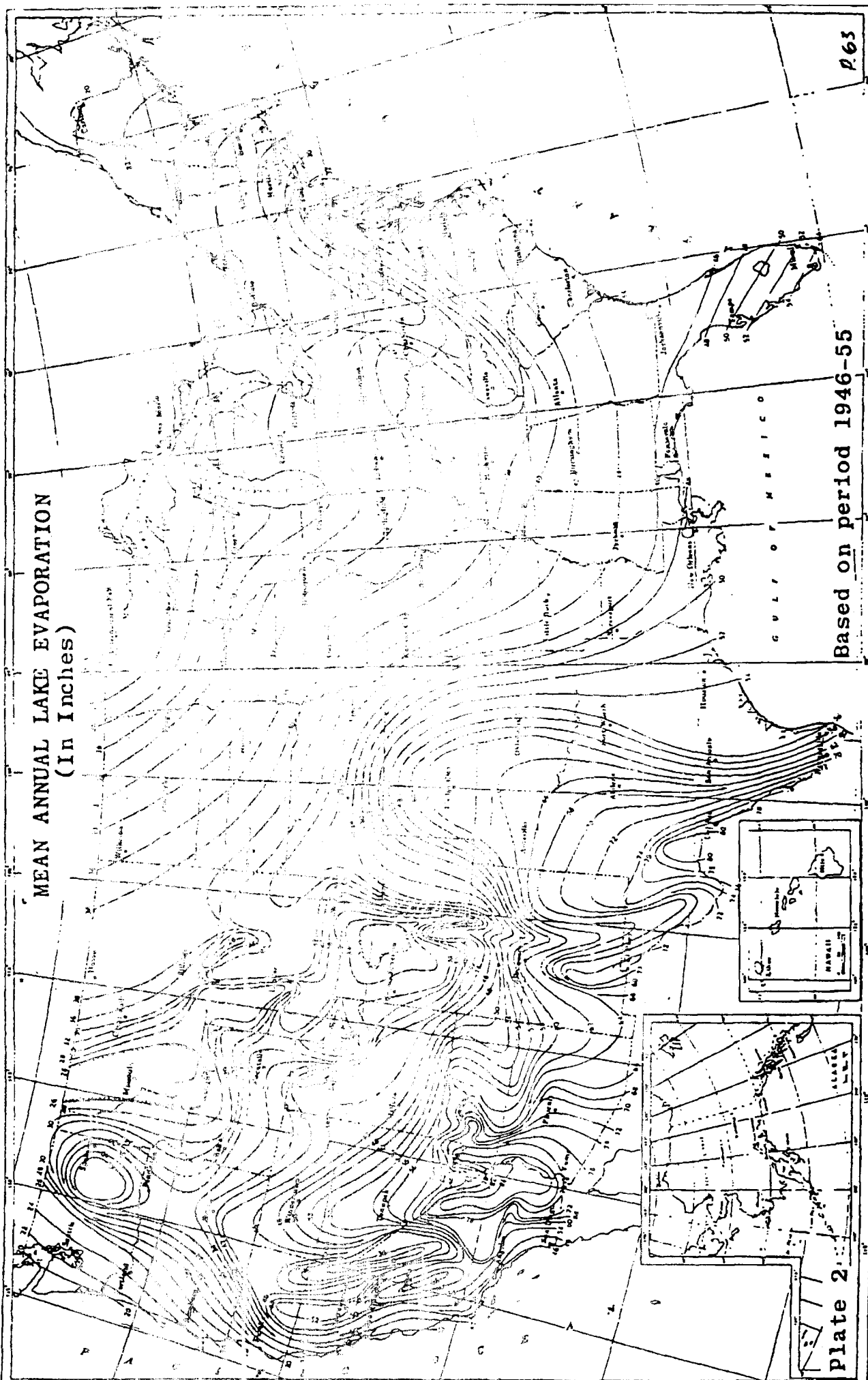
MEAN ANNUAL LAKE EVAPORATION
(In Inches)

Based on period 1946-55

P. 63

Plate 2

GULF OF MEXICO



Reference 12

FEB 13 1995

WEATHER BUREAU
F.W. RECHENBERGER, Chief

01/10/01 12:00 PAA 0/0 300 0040

IN & AS800

→ IN 0akR

006

U.S. DEPARTMENT OF COMMERCE

LARRY H. HOLLIS, Secretary

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and
Return Periods from 1 to 100 Years

Prepared by

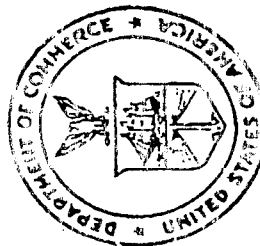
DAVID M. HERSFIELD

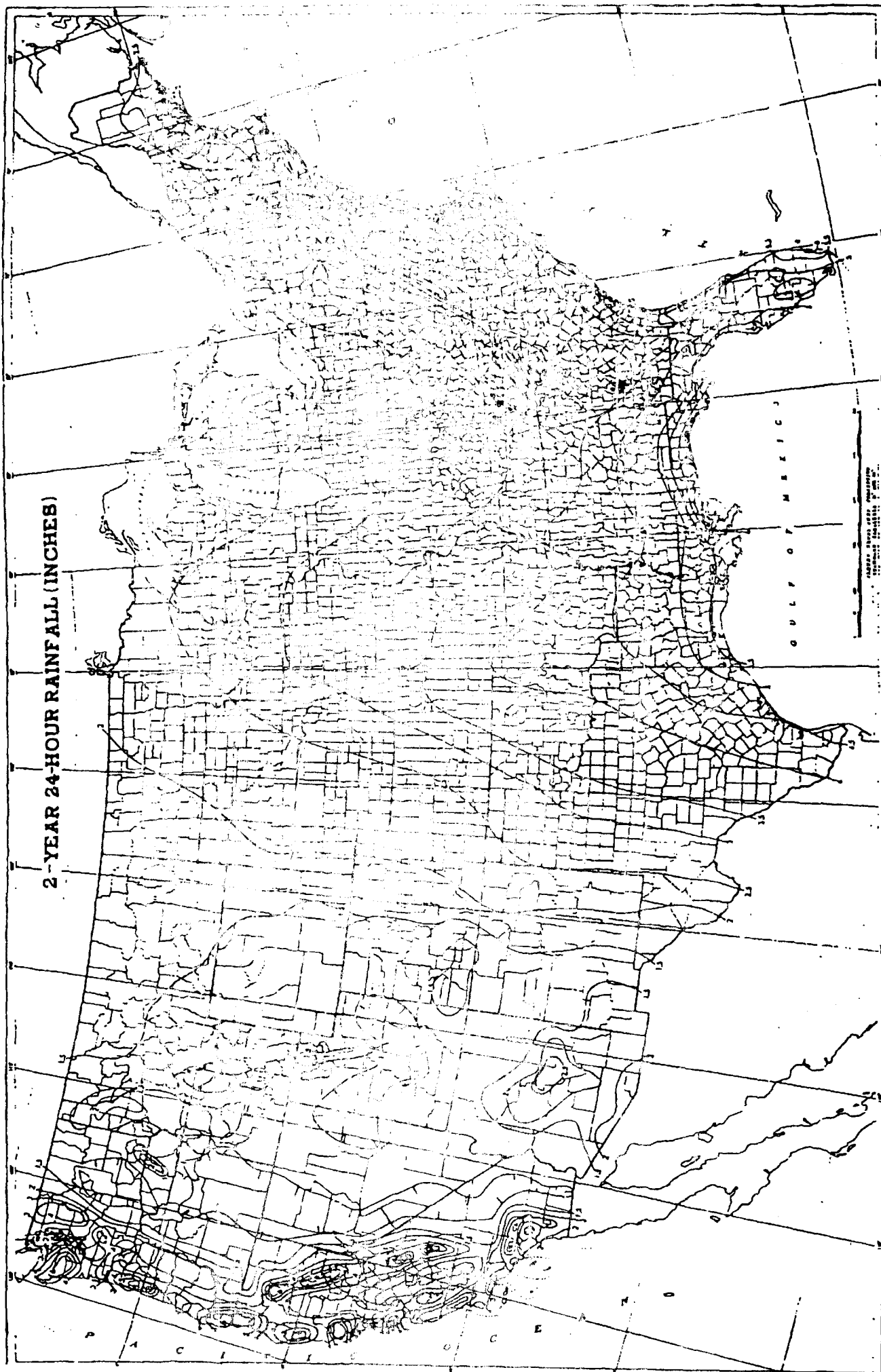
Geographic Systems Section, Hydrologic Services Division

for

Engineering Division, Soil Conservation Service

U.S. Department of Agriculture





POPULATION WORKSHEET	
Asnland Chemical Company Columbus, GA	
GAD 059 558601	
Population Radius	Population
0.25 Mile	1007
0.50 Mile	2760
1 Mile	5473
2 Mile	28309
3 Mile	67334
4 Mile	109205
Population Ring*	Population
0 to 0.25 Mile	1007
0.25 to 0.5 Mile	1762
0.5 to 1 Mile	2704
1 to 2 Mile	22836
2 to 3 Mile	39023
3 to 4 Mile	41871

*Population rings were determined by subtracting out the previous area's value from the current population value.

Reference: LandView IV

Name: _____

Signature: _____

TN&Associates, Inc.
840 Kennesaw Avenue, Suite 7
Marietta, GA 30060
(678) 355-5550

LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="27"/>	<input type="text" value="24"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.456944"/>
Longitude	<input type="text" value="84"/>	<input type="text" value="58"/>	<input type="text" value="59"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="84.983333"/>



Main Menu

Enter Radius miles

Calculate
Population

Clear all fields

Refresh Lat/Long
from MARPLOT

Print this screen

Show this radius
on map

Note: Population Statistics are not available for Virgin Islands., Guam, American Samoa, and N. Mariana Islands.
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="1007"/>	White:	<input type="text" value="13"/>
Housing units:	<input type="text" value="438"/>	Black:	<input type="text" value="988"/>
Census Block count:	<input type="text" value="10"/>	Indian:	<input type="text" value="0"/>
Area within radius (sq. mi.):	<input type="text" value="0.196"/>	Asian:	<input type="text" value="5"/>
		Hispanic	<input type="text" value="8"/>

LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MAPLOT map values.
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="27"/>	<input type="text" value="24"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.456944"/>
Longitude	<input type="text" value="84"/>	<input type="text" value="58"/>	<input type="text" value="59"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="84.983333"/>



Main Menu

Enter Radius mile

Calculate
Population

Clear all fields

Refresh Lat/Long
from MAPLOT

Print this screen

Show this radius
on map

Note: Population Statistics are not available for Virgin Islands., Guam, American Samoa, and N. Mariana Islands.
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="2769"/>	White:	<input type="text" value="350"/>
Housing units:	<input type="text" value="953"/>	Black:	<input type="text" value="2391"/>
Census Block count:	<input type="text" value="35"/>	Indian:	<input type="text" value="17"/>
Area within radius (sq. mi.):	<input type="text" value="0.785"/>	Asian:	<input type="text" value="0"/>
		Hispanic:	<input type="text" value="23"/>

LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="27"/>	<input type="text" value="24"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.456944"/>
Longitude	<input type="text" value="84"/>	<input type="text" value="58"/>	<input type="text" value="59"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="84.983333"/>



Main Menu

Enter Radius miles

Calculate
Population

Clear all fields

Refresh Lat/Long
from MARPLOT

Print this screen

Show this radius
on map

Note: Population Statistics are not available for Virgin Islands., Guam, American Samoa, and N. Mariana Islands.
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="5473"/>	White:	<input type="text" value="1368"/>
Housing units:	<input type="text" value="2576"/>	Black:	<input type="text" value="4042"/>
Census Block count:	<input type="text" value="38"/>	Indian:	<input type="text" value="18"/>
Area within radius (sq. mi.):	<input type="text" value="3.142"/>	Asian:	<input type="text" value="26"/>
		Hispanic	<input type="text" value="53"/>

LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MAPLOT map values.
Or, you may enter your own values in Degrees, Minutes, Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="27"/>	<input type="text" value="24"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.456944"/>
Longitude	<input type="text" value="84"/>	<input type="text" value="58"/>	<input type="text" value="59"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="84.983333"/>



Main Menu

Enter Radius miles

Calculate
Population

Clear all fields

Refresh Lat/Long
from MAPLOT

Print this screen

Show this radius
on map

Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="28309"/>	White:	<input type="text" value="9652"/>
Housing units:	<input type="text" value="13130"/>	Black:	<input type="text" value="12190"/>
Census Block count:	<input type="text" value="1589"/>	Indian:	<input type="text" value="52"/>
Area within radius (sq. mi.):	<input type="text" value="12.566"/>	Asian:	<input type="text" value="71"/>
		Hispanic:	<input type="text" value="214"/>

LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The defaults are the current MARPLOT map values.
Or, you may enter your own values in Degrees/Minutes/Seconds, or Decimal Degrees.
- Step 2: If you entered the Latitude & Longitude, choose the appropriate Hemisphere.
The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude	<input type="text" value="32"/>	<input type="text" value="27"/>	<input type="text" value="24"/>	<input checked="" type="radio"/> North <input type="radio"/> South	<input type="text" value="32.456944"/>
Longitude	<input type="text" value="84"/>	<input type="text" value="58"/>	<input type="text" value="59"/>	<input checked="" type="radio"/> West <input type="radio"/> East	<input type="text" value="84.983333"/>



Main Menu

Enter Radius miles

Calculate
Population

Clear all fields

Refresh Lat/Long
from MARPLOT

Print this screen

Show this radius
on map

Note: Population Statistics are not available for Virgin Islands., Guam, American Samoa, and N. Mariana Islands.
Race statistics are not available for Puerto Rico.

Results			
Total population:	<input type="text" value="67334"/>	White:	<input type="text" value="29158"/>
Housing units:	<input type="text" value="30536"/>	Black:	<input type="text" value="37473"/>
Census Block count:	<input type="text" value="1169"/>	Indian:	<input type="text" value="128"/>
Area within radius (sq. mi.):	<input type="text" value="28.274"/>	Asian:	<input type="text" value="347"/>
		Hispanic	<input type="text" value="739"/>

LandView 1990 Census Population Estimator

- Step 1: Enter Latitude and Longitude. The default is the center of the U.S. (37° 45' N, 98° 30' W).
- Or, you may enter your own values in Degrees/Minutes/Seconds. Or, you may enter your own values in Degrees/Minutes/Seconds.
- Step 2: If you entered the Latitude & Longitude, choose the continent or continent. The continental U.S. is North and West.
- Step 3: Enter the Radius.
- Step 4: Press the Calculate Population button.

	deg.	min.	sec.	hemisphere	decimal degrees
Latitude	32	27	24	<input type="radio"/> North <input type="radio"/> South	32.45664
Longitude	84	58	59	<input checked="" type="radio"/> West <input type="radio"/> East	84.983333



Main Menu

Enter Radius

4

Clear all fields

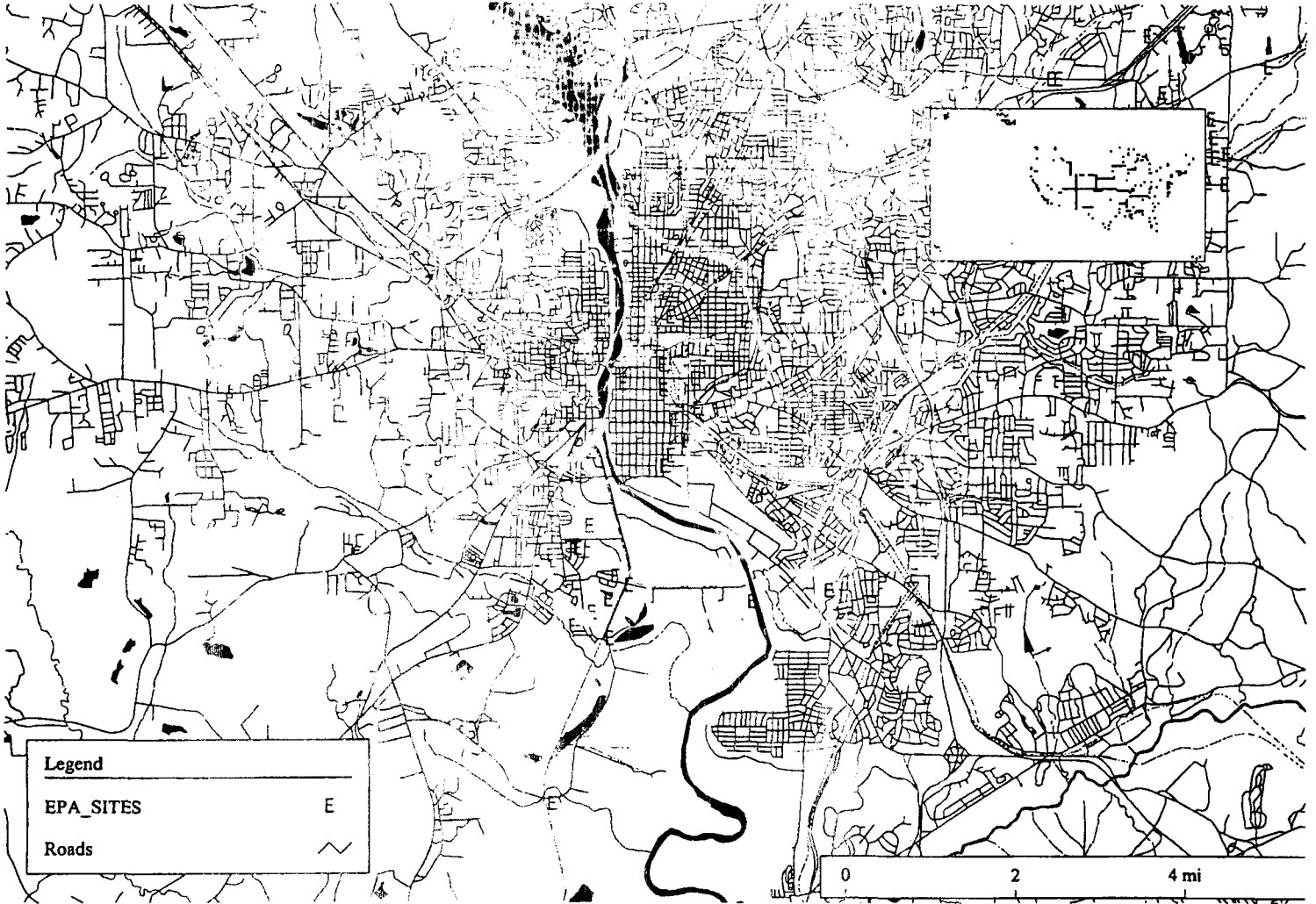
Refresh Lat/Long
from MAPLOT

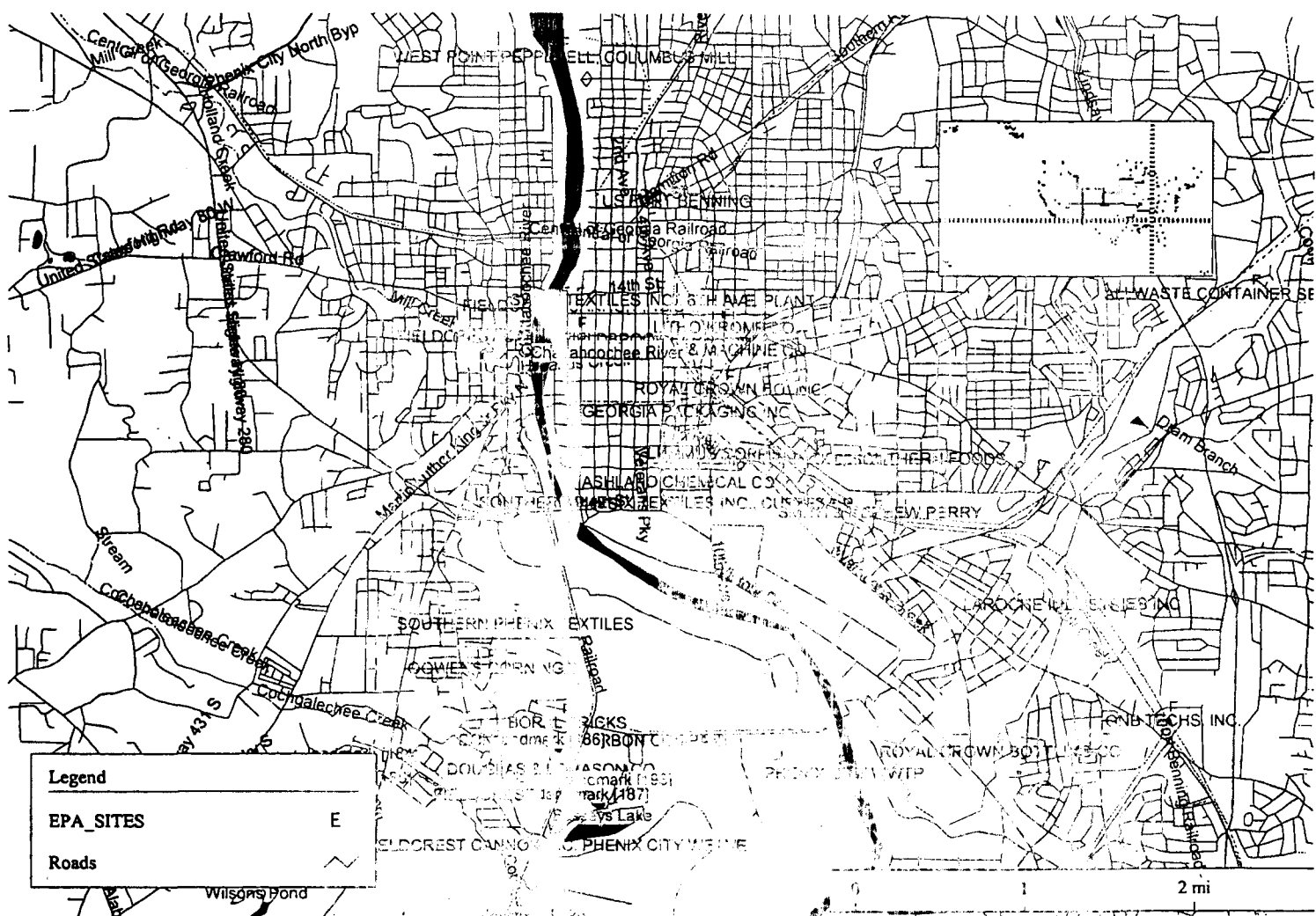
Print this screen

Show this radius
on map

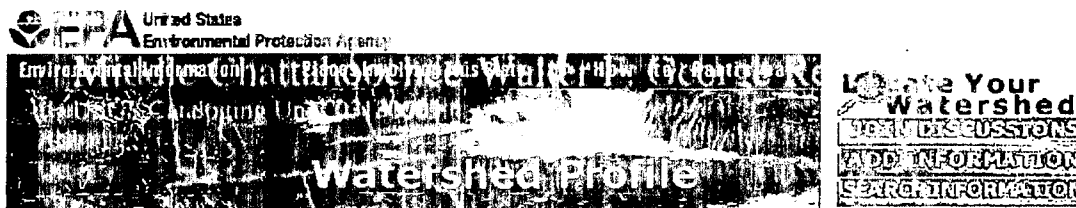
Note: Population Statistics are not available for Virgin Islands, Guam, American Samoa, and N. Mariana Islands.
Race statistics are not available for Puerto Rico.

Results			
Total population:	109203	White:	64124
Housing units:	48207	Black:	22992
Census Block count:	1754	Indian:	1249
Area within radius (sq. mi.):	10.288	Asian:	1007
		Hispanic:	141





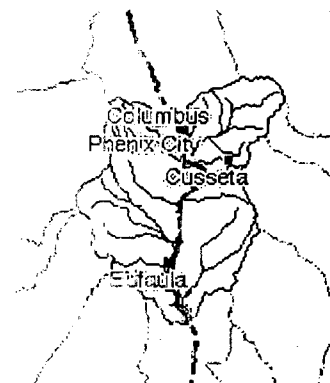
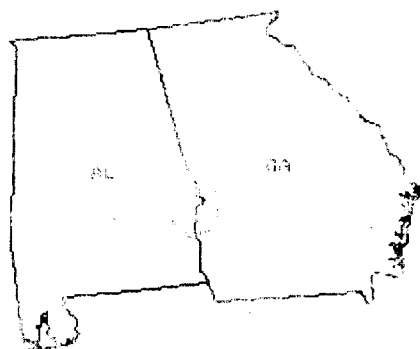
Reference 14



News Flashes:

Middle Chattahoochee-Water F. George Reservoir

USGS Cataloging Unit: 03130003



States
Involving this
Watershed

Environmental Profile

Find general information integrated for this specific watershed

States:

- [Alabama](#)
- [Georgia](#)

Assessments of Watershed Health

[Index of Watershed Indicators](#) (provided by EPA)

[Unified Watershed Assessments \(UWA\)](#) (provided by States and Tribes)

[1998 Impaired Water](#) (provided by EPA / State partnership)

Counties:

- [Barbour](#)
- [Bullock](#)
- [Chattahoochee](#)
- [Clay](#)
- [Harris](#)
- [Leah](#)
- [Lee](#)
- [Macon](#)
- [Marion](#)
- [Muscogee](#)
- [Quitman](#)
- [Randolph](#)

Environmental Information

[River Corridors and Wetlands Restoration Efforts](#)

[Environmental Web Sites:](#)

- [Real Time](#)

Facilities regulated by EPA (provided by Envirofacts)

- [Toxic releases](#) (Source: [TRI](#) - Toxic Release Inventory)
- [Hazardous Wastes](#) (Source: [RCRA](#) - Resource Conservation and Recovery Act)
- [Superfund Sites](#) (Source: [CERCLA](#) - Comprehensive Environmental Response, Compensation, and Liability Act)

[EnviroMapper for Watersheds](#) - (interactive mapping tool)

Water

- [Russell](#)
- [Stewart](#)
- [Talbot](#)
- [Taylor](#)
- [Webster](#)

Metropolitan Areas:

- [Columbus](#)

Nominated American Heritage Rivers:

Other Watersheds: upstream

- [Middle Chattahoochee-Lake Harding](#)

downstream

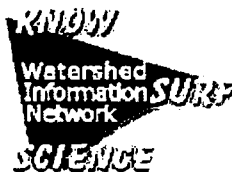
- [Lower Chattahoochee](#)

Tribes

- None Known

Large Ecosystems:

- [Gulf of Mexico Program](#)



Find information focused on water quality for this watershed.

[Rivers and Streams](#) in this watershed are regulated by the Clean Water Act (CWA).

Lakes in the watershed: 324 Total number of watershed acres: 43632.5

River and stream miles:

- o 4635 total river miles
- o 2214 perennial river miles
- o No data available: % of total rivers and streams have been surveyed
- o No data available: % of rivers and streams have been surveyed

The following aquifers are in this basin:

(Source: USGS Principal Aquifers of the United States, 1998)

Aquifer	Miles	Rock Type
Southeastern Coastal Plain aquifer system	2716	Semiconsolidated sand aquifers
No Principal Aquifer	129	N/A

Facilities regulated by EPA (provided by the LULUS):

- o [Community Water Supply](#) (Source: EPA/CWA Section 141 Water Information Program)
- o [Water Discharge](#) (Source: EPA/CWA Section 402 Permit Compliance System)

Information provided by the United States Geological Survey (USGS):

[DATA](#)

- o [Stream Flow](#) (Source: USGS)
- o [Science in Your Watershed](#)
- o [Historical Water Data](#)
- o [Water use \(1980\)](#) Information about the amount of water used and how it is used.
- o [Selected USGS Lists](#)

Land

Find watershed information focused on land characteristics

Area: 2813.25 sq mi Perimeter: 261.85 mi

Habitat:

- [Forest/Riparian Habitat](#)
- [Agricultural/Urban Riparian Habitat](#)

People

Find out about local actions in this watershed:

[Citizen-based Groups at work in this Watershed](#) (Provided by Adopt Your Watershed)

[Adopt Your Watershed](#)

[National Watershed Network](#) (provided by Conservation Technology

[Innovation Center](#))

Air

Find information focused on air for this watershed:

Facilities regulated by EPA (provided by Envirofacts)

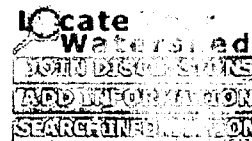
- o [Air](#) (Source: [AIRS](#))

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[TEXT VERSION](#) | [SURF HOME](#)

<http://www.epa.gov/surf3/hucs/03130003/>

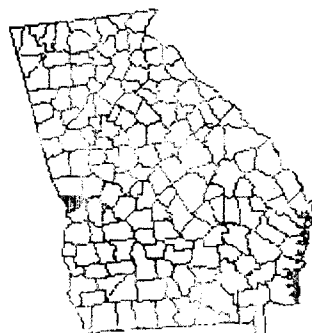
Revised: 12/19/2000

Reference 15



Muscogee, GA

Click on the map to zoom in on your watershed



[Watershed health Index of Watershed Indicators](#)
[Information about this county.](#)

This county crosses 2 [watersheds](#).

Environmental Profile

(provided by EPA's Center for Environmental Information and Statistics (CEIS))

[Where does my drinking water come from?](#)

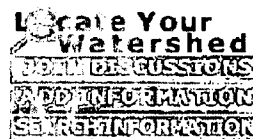
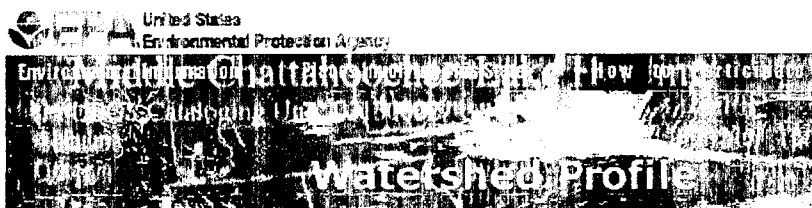
Find environmental information for each of these watersheds:

- o [03130002](#) Middle Chattahoochee-Lake Harding; states: AL GA
- o [03130003](#) Middle Chattahoochee-Walter F. George Reservoir; states: AL GA

[EPA HOME](#) | [CONTACTS](#) | [DISCLAIMER](#) | [ABOUT](#) | [HELP](#) | [COMMENTS](#)
[TEXT VERSION](#) | [PRINT PAGE](#)

URL: <http://www.epa.gov/surf3/counties/13215/>
Revised on 8-1-2006 at 15:48

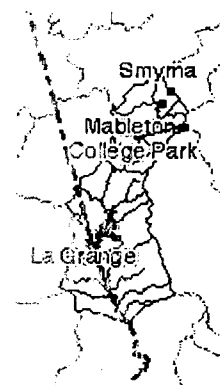
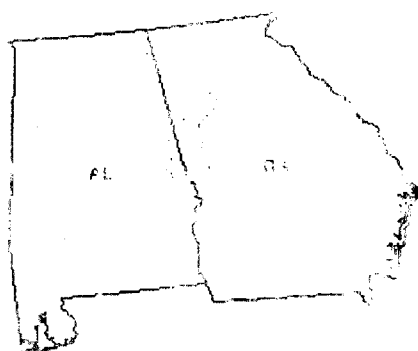
Reference 16



News Flashes:

Middle Chattahoochee-Lake Harding

USGS Cataloging Unit 03130002



Places
Involved in this
Watershed

Environmental Profile

Find general information integrated for this specific watershed

States:

- [Alabama](#)
- [Georgia](#)

Countries:

- [Carroll](#)
- [Cherokee](#)
- [Clayton](#)
- [Cobb](#)
- [Coweta](#)
- [Douglas](#)
- [Fulton](#)
- [Harris](#)
- [Heard](#)
- [Lee](#)
- [Muscogee](#)
- [Muscogee](#)

Assessments of Watershed Health

[Index of Watershed Indicators](#) (provided by EPA)

[Unified Watershed Assessments \(UWA\)](#) (provided by States and Tribes)

[1998 Impaired Water](#) (provided by EPA / State partnership)

Environmental Information

[River Corridors and Wetlands Restoration Efforts](#)

[Environmental Web Sites:](#)

- [Real Time](#)

Facilities regulated by EPA (provided by Envirofacts)

- [Toxic releases](#) (Source: [TRI](#) - Toxic Release Inventory)

- [Hazardous Wastes](#) (Source: [RCRA](#) - Resource Conservation and Recovery Act)

- [Superfund Sites](#) (Source: [CERCLA](#) - Comprehensive Environmental Response, Compensation, and Liability Act)

[EnviroMapper for Watersheds](#) - (interactive mapping tool)

Water

- [Paulding](#)
- [Randolph](#)
- [Russell](#)
- [Talbot](#)
- [Troup](#)

Metropolitan Areas:

- [Atlanta](#)
- [Columbus](#)

Nominated American Heritage Rivers:

Other Watersheds: upstream

- [Upper Chattahoochee](#)

downstream

- [Middle Chattahoochee-Walter F. George Reservoir](#)

Tribes

- None Known

Large Ecosystems:

- [Gulf of Mexico Program](#)
- [Southern Appalachians Assessment \(SAA\)](#)
- [Southern Appalachian Man and the Biosphere Reserve Area \(SAMAB\)](#)

Find watershed information focused on water resources and water use

Rivers and Streams in the Watershed: 25 (part of EPA's First River Reach File)

Lakes in the watershed: 731 (total watershed area covered acres: 39735.5)

Rivers and stream miles:

- 1500.7 total river miles
- 348.3 perennial river miles
- No data available :% of total river and streams have been surveyed
- No data available :miles meet all designated uses

The following aquifers are in the watershed:

Source: USGS Principal Aquifers of the Atlantic Coastal Plain (United States 1998)

Aquifer	Square Miles	Rock Type
Deep Principal Aquifer	1,000	Crystalline rocks
Shallow Principal Aquifer	1,000	Unconsolidated sand
Shallow Principal Aquifer	1,000	Unconsolidated sand
Shallow Principal Aquifer	1,000	Unconsolidated sand

Regulated by EPA (provides information):

- [Community Water Supply](#) (Source: SDWA Safe Drinking Water Information System)
- [Water Dischargers](#) (Source: CWA Drinking Water Compliance System)

Information provided by the United States Geological Survey (USGS):

[Water Use](#)

- [Stream Flow](#) (Source: USGS)
- [Science in Your Watershed](#)
- [Historical Water Data](#)
- [Water use \(1980\)](#): Information about the amount of water used and how it is used.
- [Selected USGS Data](#)

Land

Find watershed information focused on land use and land cover

Area: 37.11 sq mi; perimeter: 301.14 mi

Habitat:

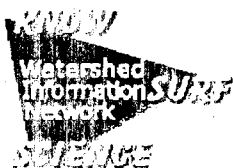
- [Forest/Riparian Habitat](#)
- [Agricultural/Urban Riparian Habitat](#)

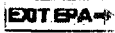
People

Find out about local actions in this watershed

[Organized Groups at work in the Watershed](#) (Compiled by Adopt Your Watershed)

[Lakeview](#)
[Sci](#)
[Ass](#)
 • [Science](#)
[Appalachian](#)
[Mountains](#)
[Initiative](#)
[\(SAM\)](#)



[Join Now](#) (Adopt Your Watershed)
[National Watershed Network](#) (provided by [Conservation Technology](#)
[Information Center](#)) 

Air

Find information focused on air for this watershed:

Facilities registered by EPA (provided by [Envirofacts](#))
 o [Air](#) (Source: [AIRS](#))

[EPA HOME](#) | [CONTACTS](#) | [DISCLAIMER](#) | [ABOUT](#) | [HELP](#) | [COMMENTS](#)
[TEXT VERSION](#) | [SURF HOME](#)

<http://www.epa.gov/surf3/hucs/03130002/>
 Revised: 12/19/2000

Reference 10

Georgia - Department of Geology

Geology of Georgia



- [State-wide Geologic History](#)
- [The Four Geologic Regions and Their Highways](#)
- [Major Geologic Hazards](#)
- [Summary](#)

.. [Other Links](#)

.. [Disclaimers](#)

Introduction

The Valley and Ridge

The Blue Ridge

The Piedmont

1/15/01

One major feature cutting across the Piedmont (as defined here) is the Brevard Fault zone. The Brevard Fault Zone runs SW-NE and crosses through the mountains in Hard County, northwest Alabama, DeKalb, Buford, and Gainesville before leaving Georgia at the westernmost corner of the Ogalala River in northernmost Stephens County. The Chattahoochee River follows the Brevard Fault zone. However, the regional extent of the Brevard Zone is reflected by the fact that it is named after the town of Brevard, NC. The Brevard Fault Zone has been interpreted as a variety of different kinds of faults or discontinuities, and its true nature remains enigmatic.

Piedmonts have been recognized in all parts of Georgia's geology. They usually consist of kaolinite-group (kaolinite, halloysite, dickite) clays and silts that result from the intense weathering of feldspar-rich igneous and metamorphic rocks. This intense weathering dissolves or alters nearly all minerals and leaves behind a residue of aluminum-bearing clays and iron-bearing iron oxides because of the low solubilities of aluminum and iron at earth-surface conditions. Those iron oxides give the red color to the clay-rich soil, yielding the red clay that has come to be almost synonymous with central Georgia, and the abundance of clay has contributed to a tradition of folk pottery in central and north Georgia.

Mineral resources of the Piedmont include hard crushed stone, which is quarried by such companies as Vulcan Materials. Granite has long been quarried for tombstones and other monuments in the eastern Piedmont near Elberton, and it was once quarried from the Stone Mountain granite at Stone Mountain Park. Some stone was mined by Native Americans in southwestern DeKalb County at Shannon Bridge. One well-known kyanite mine in the Piedmont was at Grave's Mountain. Groundwater in the Piedmont largely flows along faults and fractures, making it difficult to find but often locally abundant.

The granitic rocks of the Piedmont make for a potential concern in the region. The USGS map of geologic radon potential shows the Piedmont, as well as the Blue Ridge, as a region of "moderate" radon potential, whereas that potential is "low" in the valley and Ridge and Valley belts.

Athens and Atlanta are two cities in the Georgia Piedmont. The Piedmont extends a little bit westward into Alabama before it pinches out between the Valley and Ridge and the Coastal Plain. To the northeast, it cuts a broad swath across South Carolina, North Carolina, and Virginia. Spartanburg, SC, and Greensboro and Winston-Salem, NC, are Piedmont cities to the northeast of Georgia.

The Fall Line

The Fall Line is the boundary between the Piedmont and the Coastal Plain. Its name arises from the occurrence of waterfalls and rapids that are the major barriers to navigation on Georgia's major rivers. Thus the cities of Columbus, Macon, Milledgeville, and Augusta developed where boats had to be unloaded on the Chattahoochee, Ocmulgee, Oconee, and Savannah Rivers, respectively. These waterfalls and rapids occur where the rivers drop off the hard crystalline rocks of the Piedmont onto the more readily eroded sedimentary rocks of the Coastal Plain. The Georgia Department of Transportation intends to link Columbus, Macon, Milledgeville, and Augusta with the Fall Line Freeway (Ga 540) someday. Other Fall Line cities include Tuscaloosa, AL, Columbia, SC, and Richmond, VA.

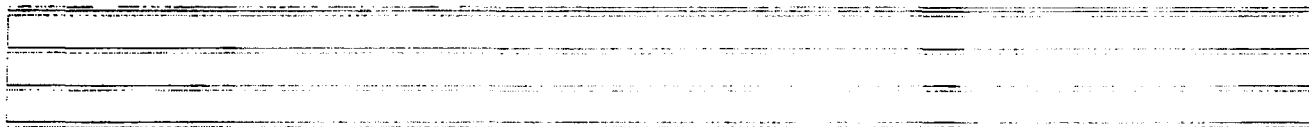
The Fall Line is a boundary of bedrock geology, but it can also be recognized from stream geomorphology. Upstream from the Fall Line, rivers and streams typically have very small floodplains, if they have any at all, and they do not have well-developed meanders (curves that nearly or completely reverse the direction of flow). Within a mile or so downstream from the Fall Line, rivers and streams typically have floodplains or marshes across which they flow, and within three or four miles they meander. The most pronounced example is in the Savannah River's course at Augusta, but the same change can be seen in Brier Creek, the Ogeechee River, Buffalo Creek, the Oconee River, the Ocmulgee River, Echeconnee Creek, the Flint River, Upatoi Creek, and the Chattahoochee River from east to west across Georgia.

The Coastal Plain

The Coastal Plain is a region of Cretaceous and Cenozoic sedimentary rocks and sediments. These strata dip toward the southeast, and so they are younger nearer the coast. At least near the Fall Line, they are ultimately underlain by igneous and metamorphic rocks like those of the Piedmont. The sedimentary rocks of the Coastal Plain partly consist of sediment

Summary

Georgia consists of four geologic regions whose history is a function of plate tectonics and of the closing and opening of an ocean basin 300 to 200 million years ago. The geologic resources available to us are a function of the geology of those four regions, and the major geologic hazards are a function of the state's tectonic setting.



More Links

Chuck and Rachel Cochran have a nice [Geologic Map of Georgia](#) and an informative site about [Georgia's geology](#).

The U.S. Geological Survey has an on-line [Fact Sheet](#) for Georgia.

Valuecom has a page at which you can learn more about [Georgia's geology](#).

The state government's server has a nice [topographic image](#) of Georgia, which of course takes credit for the road, as well as [other Georgia maps](#). UGA's Carl Vinson Institute of Government has a website of [information about Georgia](#), a page of links to [various maps of Georgia](#), and a [Georgia Photo Gallery](#). There is also a state [GIS](#) of [GIS-based maps](#).

One human-made geologic resource in Georgia with a website is the [Weigert Mineral Museum](#) near Carersville.

We also have a list of [Georgia Geology Links](#).

If we've baffled you with geologic terminology, visit Iowa State University's [Simplified Geologic and Related Terms](#) or the University of Washington's and World Publishers's [Geology Link: Geologic Glossary](#). We of course invite you to visit the [University of Georgia Geology Department's Home Page](#).

Disclaimers

This page has links to some commercial pages. Links to these pages do not constitute an endorsement of the products of the companies sponsoring those pages.

None of the information in this document should be construed as advice for making economic or other decisions. None of the statements in this document should be construed as official opinions or statements of the Department of Geology, the University of Georgia, of the University of Georgia, or of the State of Georgia. Consult a specialist in your area before using geological information to make decisions about infrastructure, public safety, or environmental safety.

This page is a continually evolving document that should be viewed as a repository to which you can send feedback and contribute. Don't get mad at what you read here, just change it. If you would like to contribute or suggest changes, if you think we've overlooked something, or made a mistake, or if you have a comment, but for something that should be added, or if you just have a comment, please contact [Bruce Railsback](#). Thanks.

This page is a product of the Department of Geology of the University of Georgia, Athens, Georgia, USA.

PREFACE

This report was prepared in cooperation with the following agencies, whose assistance in collecting and compiling water-level and water-quality data during 1999 is gratefully acknowledged:

Georgia Department of Natural Resources
Environmental Protection Division
Georgia Geologic Survey
Albany Water, Gas, and Light Commission
City of Brunswick
Glynn County

The report is the culmination of a concerted effort by personnel of the U.S. Geological Survey who collected, compiled, organized, analyzed, and prepared the data, and individuals who enabled the report. In addition to the author who had primary responsibility for ensuring that the information contained herein is accurate and complete, the following individuals contributed in various ways to the collection, processing, analysis, and review of the data:

Robert J. Allen	Mark S. Reynolds
Nancy L. Barber	Welby L. Saylor
John M. McCranie	William T. Sharpe
Kristen B. McSwain	Debra Wagner
Sherlyn Priest	Cary K. Wipperfurth

Data used in this report may not have been collected from the 12 Reading Survey.

VERTICAL DATUM

Sea Level--In this report, "sea level" refers to the National Geodetic Survey datum of 1929, which was derived from the general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

ABSTRACT

Ground-water conditions in Georgia during 1999 and for the period of record were evaluated using data from U.S. Geological Survey ground-water-level and ground-water-quality monitoring wells. Data reported in this report are from continuous water-level records from 130 wells and chloride analyses from 14 wells. Data from one well is incomplete because data collection was discontinued.

Chloride concentration in water from the Upper Floridan aquifer in most of coastal Georgia was within drinking-water standards established by the Georgia Department of Natural Resources and the U.S. Environmental Protection Agency. In the Savannah area, chloride concentration has not changed appreciably with time. However, chloride concentration in water from some wells that tap the Floridan aquifer system in Brunswick exceeds the drinking-water standards.

INTRODUCTION

Ground-water-level and ground-water-quality data are essential for water assessment and management. Ground-water-level fluctuations and trends can be used to estimate changes in water storage resulting from the effects of ground-water withdrawal and recharge from precipitation. These data can be used to address water-management needs and to evaluate the effects of management and conservation programs.

As part of the ground-water investigations conducted by the U.S. Geological Survey (USGS) in cooperation with the State of Georgia and city and county governments, a Statewide water-level-measurement program was started in 1938. Initially, this program consisted of an observation-well network in the coastal area of Georgia to monitor variations in

ground-water storage and supply. Additional wells were later included in areas where data could be used to aid in water resources development and management.

During 1999, 1,041 water-level measurements were made in 46 wells, and numerous water-level measurements were obtained from 1,041 wells. Continuous water-level records were obtained using analog (pen and chart) recorders and electronic data loggers to record the water level of the Floridan aquifer. Records include water-level record, water-level change, and a series of water-level data points for higher and lower water levels. Water samples collected during the year 1999, from January to November, and December 1999 were analyzed for chloride ion concentration in the Savannah and Brunswick areas.

Purpose and Scope

This report presents a summary of ground-water conditions in Georgia for calendar year 1999 and for the period of record. Graphs showing water-level levels in 130 wells are presented. Graphs show chloride concentrations from 10 wells from the Floridan aquifer system in the Savannah and Brunswick areas. The text includes a brief discussion of the aquifers and aquifer systems, ground-water levels, and chloride concentration in water. An index of water-levels of wells is included. References are presented in the "References;" previously published reports on ground-water conditions in Georgia are listed in Table 1.

Table 1. Previous reports on ground-water conditions in Georgia
[USGS, U.S. Geological Survey]

Year of data collection	Water-level data	Author(s)	Year of publication
1977	70-317	U.S. Geological Survey	1978
1978	70-317	U.S. Geological Survey	1979
1979	70-317	U.S. Geological Survey	1980
1980	70-317	U.S. Geological Survey	1981
1981	70-317	U.S. Geological Survey	1982
1982	70-317	U.S. Geological Survey	1983
1983	70-317	U.S. Geological Survey	1984
1984	70-317	U.S. Geological Survey	1985
1985	70-317	U.S. Geological Survey	1986
1986	70-317	U.S. Geological Survey	1987
1987	70-317	U.S. Geological Survey	1988
1988	70-317	U.S. Geological Survey	1989
1989	70-317	U.S. Geological Survey	1990
1990	70-317	U.S. Geological Survey	1991
1991	70-317	U.S. Geological Survey	1992
1992	70-317	U.S. Geological Survey	1993
1993	70-317	U.S. Geological Survey	1994
1994	70-317	U.S. Geological Survey	1995
1995	70-317	U.S. Geological Survey	1996
1996	70-317	U.S. Geological Survey	1997
1997	70-317	U.S. Geological Survey	1998
1998	70-317	U.S. Geological Survey	1999

Georgia Well Identification Numbering System

Wells described in this report are given an identification number according to a system used in the USGS index of topographic maps. The first three digits of the number indicate the geographic location of the well in the State of Georgia. The last three to four digits

number and letter designation (example: 0711 11AA) beginning at the south-western corner of the State. Numbers increase sequentially eastward and letters advance alphabetically northward. Quadrangles in the northern part of the State are designated by double letters: AA follows Z, and so forth. The letters "F", "O", "I", and "Q" are not used. Wells inventoried in each quadrangle are numbered consecutively beginning with 01. Thus, the third well inventoried in the 11AA quadrangle is designated 11AA-03.

Hydrologic Unit Codes

The hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the USGS. Office of Water Data Coordination. In state hydrologic unit maps each hydrologic unit is identified by an 8-digit number.

Next

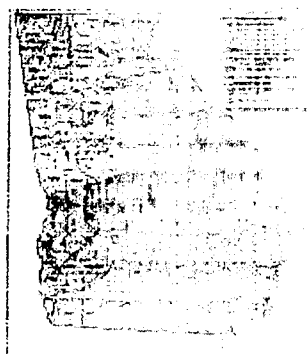
Recent USGS publications on Northern California Ground Water
Last updated Thursday, 08-Oct-2000 15:03:55 EDT
The URL for this page is <http://ga.water.usgs.gov/8/California/0000-1510-der.html>



Ground-Water Resources of Georgia

USGS Circular 1036

GROUND-WATER RESOURCES



Contrasting geologic features and landforms of the physiographic provinces of Georgia (table 2, fig. 1) result in substantial differences in ground-water conditions from one part of the State to another. These features that make up the framework of the aquifers affect the quantity and quality of ground water throughout the State.

Surficial aquifers are present in each of the physiographic provinces. In the Piedmont, Blue Ridge, and Valley and Ridge Provinces, the surficial aquifers consist of alluvial, stream alluvium, colluvium, and other surficial deposits. In the Coastal Plain, the surficial aquifers consist of unconsolidated layers of sand, silt, and limestone. The surficial aquifers vary in thickness and are generally unconfined. They are used for domestic and livestock supplies. These aquifers are also important in the production of water.

In the Piedmont and Blue Ridge Provinces, the aquifers are composed of naturally deformed metamorphic and igneous rocks. Ground water is transmitted through secondary openings along fractures, foliation, joints, contacts, or other features in the rock framework. In the Valley and Ridge Province, ground water is transmitted through both primary and secondary openings in folded and faulted sedimentary and metasedimentary rocks of Paleozoic age.

The most productive aquifers in Georgia are in the Coastal Plain Province in the southern part of the State. The Coastal Plain is underlain by unconsolidated layers of sand, silt, and limestone that extend to the southeast. Coastal Plain aquifers generally are confined except near their northern limits, where they crop out or are near land surface. Aquifers in the Coastal Plain include the upper and lower Brunswick aquifers, the Floridan aquifer system, the Claiborne aquifer, the Cotton aquifer, the Clayton aquifer, and the Cretaceous aquifers and aquifer systems.

Table 2. Aquifer and well characteristics in Georgia.

[modified from Burke and Price (1934) and Park and others (1952), in text; gallons per minute]

Aquifer name and description	Well characteristics			Remarks
	Depth (ft)	Yield (gpm)	Common range	
Surficial aquifer	1-7	2-25	40	Primary source of water for domestic and livestock supply in rural areas. Supplemental source of water in coastal Georgia.
Unconsolidated sediments, residuum, generally unconfined				

<u>Upper and lower Brunswick aquifers:</u> Phosphatic and dolomitic quartz sand, generally confined	85-390	10-30	180	Not a major source of water in Georgia, but considered a supplementary source to the Upper Floridan aquifer. The multi-aquifer system includes the upper and lower Brunswick aquifers and the Upper Floridan aquifer. The lower Brunswick aquifer is not monitored (Clarke and others, 1990, pp. 5-28).
<u>Floridan aquifer system:</u> Limestone, dolomite, and calcareous sand, generally confined	40-900	1,000-5,000	1,000	Supplies 50 percent of ground water in Georgia. The aquifer system is divided into the Upper and Lower Floridan aquifers. In the Brunswick area, the Upper Floridan aquifer is the main freshwater source for the city of Brunswick. The Lower Floridan aquifer is the major aquifer in the Brunswick area and in northeastern Georgia. The Upper Floridan aquifer includes the brackish water zone, the fresh water zone, and the remaining permeable zone (Gause and Randolph, 1989). The Lower Floridan aquifer extends more than 2,000 feet below sea-level (Clarke and others, 1990, p. 5-28).
<u>Gordon aquifer system:</u> Sand and sandy limestone, generally confined	270-530	87-1,200	1,800	Major source of water for municipal, industrial, and public supply use in northern Georgia.
<u>Claiborne aquifer:</u> Sand and sandy limestone, generally confined	20-450	150-500	1,500	Major source of water for municipal, industrial, and public supply use in northern Georgia.
<u>Clayton aquifer:</u> Limestone and sand, generally confined	40-800	250-500	2,150	Major source of water for municipal, industrial, and public supply use in northern Georgia.
<u>Cretaceous aquifers and aquifer systems:</u> Sand and gravel, generally confined	30-750	50-1,200	3,300	Major source of water for municipal, industrial, and public supply use in northern Georgia. Includes the Ocala aquifer, the Suwannee aquifer, and the Middle Suwannee aquifer.
<u>Paleozoic-rock aquifers:</u> Sandstone, limestone, and dolostone	15-2,100	1-50	3,500	Not laterally extensive, but a source of water in some areas. Includes the Ocala aquifer, the Suwannee aquifer, and the Middle Suwannee aquifer.
<u>Crystalline-rock aquifers:</u> Granite, gneiss, schist, and quartzite	40-600	1-50	500	Not laterally extensive, but a source of water in some areas. Includes the Ocala aquifer, the Suwannee aquifer, and the Middle Suwannee aquifer.

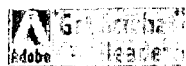
FACTORS AFFECTING LEVELS

Short-term fluctuations and long-term trends in ground-water levels result from variations in recharge and discharge. Recharge varies with precipitation and is affected by land practices, such as irrigation. Discharge occurs as natural flow from an aquifer to a river and spring, as water evaporation, and as withdrawal from wells.

Discussion of ground-water levels in Georgia is given by county (Fig. 1) and by hydrologic unit and subarea in which wells have similar hydrologic characteristics (Fig. 2).

Water-level fluctuations in 1999 are shown for all continuously monitored wells, which are considered to be representative of ground-water levels throughout the State for each well. Well-site information is listed, record high and low water levels for the period of record, monthly mean water levels are shown in hydrographs for the period of record, daily mean water levels are shown in hydrographs for 1999, and monthly and annual water-level statistics (minimum, mean, and maximum daily mean water level) are tabulated for 1999. Monthly statistics are not computed for months having less than 10 days of record. Extremes of water levels for the period of record listed in the well-site information and tabulated water-level statistics are reported to the nearest 0.3 ft, reflecting the accuracy of the recorders used. Land-surface data generally are determined from the best available topographic map, and are accurate to about one-half the contour interval. Some land-surface data are determined by surveying methods or Global Positioning System (GPS) and are more accurate. In this report, an extreme of water level is the lowest or highest daily mean water level for the period of record of a particular well. Thus, any measurements of water-level measurement on a given day may be lower or higher than the extreme water level reported in the text, the daily mean water level shown on the hydrograph, or the minimum or maximum values tabulated.

Web version note: you may continue reading the rest of this report by clicking on 'Next' below, or you may go directly to one of the lists to access the PDF file for one or more wells.



To download and view PDF files, you'll need the free Adobe Acrobat Reader software.

Observation wells for which hydrographs are included in this report:

- [Listed by county](#) (Table 3a)
- [Listed by aquifer](#) (Table 3b)
- [Listed by well identification number](#) (Table 4)

[Back](#) | [Next](#)

Recent USGS publications on Georgia or Georgia Water-Resources Information

Last updated Monday, 16-Jun-2000 10:14:11 EDT

The URL for this page is <http://ga.water.usgs.gov/publications/of00-15/wr/res.html>



Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

Table 3a. Observation wells for which hydrographs are included in this report

County	Well identification number	Well name	Water user
Baker	<u>12K014</u>	Blue Springs observation well	Upper Floridan
Bulloch	<u>31U009</u>	Georgia Geologic Survey, Hopedale, test well 1	Upper Floridan
Bulloch	<u>31U009</u>	Georgia Geologic Survey, Hopedale, test well 2	Upper Brunswick
Bulloch	<u>32R002</u>	Georgia Geologic Survey, Bulloch County, test well 1	Upper Floridan
Burke	<u>28X001</u>	U.S. Geological Survey, Middle, test well 1	Upper Floridan
Burke	<u>32Y030</u>	Edgemoor Landing, test well 1	Upper Middle
Burke	<u>32Y031</u>	Edgemoor Landing, test well 2	Upper Middle
Burke	<u>32Y033</u>	Edgemoor Landing, test well 3	Upper Middle
Calhoun	<u>10K005</u>	Bill Jordan, Ocala well	Upper Floridan
Camden	<u>33D069</u>	U.S. National Park Service, Cumberland Island National Seashore	Upper Floridan
Camden	<u>33E007</u>	U.S. Navy, Kings Bay	Upper Floridan
Camden	<u>33E027</u>	U.S. Navy, Kings Bay, test well 1	Upper Floridan
Camden	<u>33E040</u>	U.S. Navy, Kings Bay, observation well 2	Upper Floridan
Camden	<u>33E054</u>	Raymond Company No. 1	Upper Floridan
Charlton	<u>27E004</u>	U.S. Geological Survey, test well OK-9	Upper Floridan
Chatham	<u>35P094</u>	U.S. Geological Survey, Georgia Southern Farm well	Upper Floridan (part of)
Chatham	<u>36Q008</u>	Wayne-Alexander Company	Upper Floridan
Chatham	<u>36Q020</u>	U.S. Navy, Kings Bay	Upper Floridan
Chatham	<u>37P114</u>	Georgia Geologic Survey, Skidaway Institute, test well 1	Upper Floridan
Chatham	<u>37P116</u>	Georgia Geologic Survey, Skidaway Institute, test well 2	Upper Floridan (part of)
Chatham	<u>37Q010</u>	U.S. Geological Survey, test well 1	Upper Floridan
Chatham	<u>37Q185</u>	U.S. Geological Survey, Hutchinson Island, test well 1	Upper Floridan
Chatham	<u>37Q186</u>	U.S. Geological Survey, Hutchinson Island, test well 2	Upper Floridan
Chatham	<u>38Q002</u>	U.S. National Park Service, test well 6	Upper Floridan
Chatham	<u>38Q201</u>	U.S. National Park Service, Fort Palmetto, test well 1	Upper Floridan
Chatham	<u>39Q000</u>	U.S. Geological Survey, test well 7	Upper Floridan
Chattahoochee	<u>06S001</u>	U.S. Army, Fort Benning	Upper Floridan

Cherokee	<u>15H011</u>	Georgia Geological Survey, test well 1	crystalline rock
Cook	<u>15H015</u>	U.S. Geological Survey, test well 1	Upper Floridan
Crisp	<u>15H017</u>	Georgia Geological Survey, Veteran's Memorial State Park, test well 1	Clayton
Crisp	<u>15H018</u>	Georgia Geological Survey, Veteran's Memorial State Park, test well 2	Clayton
Dawson	<u>15H021</u>	U.S. Geological Survey, test well 1	crystalline rock
Decatur	<u>15H022</u>	Graham, test well 1	Upper Floridan
Decatur	<u>15H023</u>	U.S. Geological Survey, test well DP-4	Upper Floridan
Decatur	<u>15H024</u>	U.S. Geological Survey, test well DP-6	all flint (sediments of Eocene age)
DeKalb	<u>15H025</u>	U.S. Geological Survey, test well 3	crystalline rock
Dougherty	<u>15H026</u>	U.S. Geological Survey, test well 11	Clayton
Dougherty	<u>15H027</u>	test well 12	Upper Floridan
Dougherty	<u>15H028</u>	U.S. Geological Survey, test well 12	Clayton
Dougherty	<u>15H029</u>	U.S. Geological Survey, test well 14	Upper Floridan
Dougherty	<u>15H030</u>	U.S. Geological Survey, test well 1	Claborne
Dougherty	<u>15H031</u>	Georgia Geological Survey, Albany Nursery	Clayton
Dougherty	<u>15H032</u>	U.S. Geological Survey, test well 5	Claborne
Dougherty	<u>15H033</u>	U.S. Geological Survey, test well 6	Clayton
Dougherty	<u>15H034</u>	U.S. Geological Survey, test well 10	Fernandina
Dougherty	<u>15H035</u>	Waddy, test well 1	Upper Floridan
Dougherty	<u>15H036</u>	U.S. Geological Survey, test well 13	Upper Floridan
Dougherty	<u>15H037</u>	U.S. Geological Survey, test well 16	Upper Floridan
Dougherty	<u>15H038</u>	Albany Well Field, south observation well	Upper Floridan
Dougherty	<u>15H039</u>	U.S. Geological Survey, test well 15	Upper Floridan
Dougherty	<u>15H040</u>	Albany Water, Gas, and Light Commission, Turner City 1	Clayton
Dougherty	<u>15H041</u>	City of Albany and Dougherty County	Upper Floridan
Dougherty	<u>15H042</u>	U.S. Geological Survey, test well 2	Claborne
Dougherty	<u>15H043</u>	U.S. Geological Survey, test well 3	Upper Floridan
Dougherty	<u>15H044</u>	U.S. Geological Survey, test well 7	Clayton
Dougherty	<u>15H045</u>	Miller Brothers Company	Claborne
Dougherty	<u>15H046</u>	U.S. Geological Survey, test well 17	Upper Floridan
Dougherty	<u>15H047</u>	Miller Brothers Company	Upper Floridan
Early	<u>15H048</u>	Georgia Geological Survey, Kennesaw Mounds State Park, test well 1	Clayton
Early	<u>15H049</u>	Georgia Geological Survey, Kennesaw Mounds State Park, test well 5	Claborne
Early	<u>15H050</u>	U.S. Geological Survey, test well 1	Upper Floridan
Fulton	<u>15H051</u>	U.S. Army, Fort McPherson	crystalline rock (biotite gneiss)
Glynn	<u>15H122</u>	U.S. Geological Survey, test well 3	Upper Floridan; lower water-bearing zone
Glynn	<u>15H133</u>	U.S. Geological Survey, test well 6	Upper Floridan; upper water-bearing zone
Glynn	<u>15H188</u>	U.S. Geological Survey, test well 26	Lower Floridan; Fernandina permeable zone
Glynn	<u>15H206</u>	Georgia-Pacific, south, test well 1	Lower Floridan
Glynn	<u>15H207</u>	Georgia-Pacific, south, test well 2	Upper Floridan, upper water-bearing zone

Glynn	<u>33H208</u>	Georgia-Pacific, south, test well 3	Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>33J044</u>	U.S. Geological Survey, test well 27	upper Floridan
Glynn	<u>34H125</u>	U.S. Geological Survey, test well 1	upper Floridan
Glynn	<u>34H334</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H344</u>	U.S. Geological Survey, test well 7	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H354</u>	U.S. Geological Survey, test well 8	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H355</u>	U.S. Geological Survey, test well 9	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H371</u>	U.S. Geological Survey, test well 11	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H391</u>	U.S. Geological Survey, test well 11	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H403</u>	U.S. Geological Survey, test well 12	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H424</u>	Glynn County Courthouse (shallow)	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H436</u>	Georgia Geologic Survey, Ocala Park, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H437</u>	Georgia Geologic Survey, Ocala Park, test well 2	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H438</u>	Georgia Geologic Survey, Ocala Park, test well 3	upper Floridan; upper Floridan; and post-Floridan age;
Glynn	<u>34H447</u>	Glynn County Courthouse (shallow)	upper Floridan; upper Floridan; and post-Floridan age;
Gordon	<u>07KK64</u>	Camden, Georgia, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Grady	<u>12F326</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Greene	<u>21BB04</u>	Charles Veazey	upper Floridan; upper Floridan; and post-Floridan age;
Johnson	<u>24V001</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Lamar	<u>12Z001</u>	Dixie Pipe Line	upper Floridan; upper Floridan; and post-Floridan age;
Laurens	<u>21T901</u>	Dixon, Georgia	upper Floridan; upper Floridan; and post-Floridan age;
Laurens	<u>21U004</u>	Georgia Department of Natural Resources, Laurens No. 3	upper Floridan; upper Floridan; and post-Floridan age;
Lee	<u>11P014</u>	Pete Long, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Lee	<u>11P015</u>	Pete Long, test well 2	upper Floridan; upper Floridan; and post-Floridan age;
Lee	<u>12M001</u>	U.S. Geological Survey, test well 3	upper Floridan; upper Floridan; and post-Floridan age;
Lee	<u>12M002</u>	U.S. Geological Survey, test well 4	upper Floridan; upper Floridan; and post-Floridan age;
Lee	<u>12M017</u>	U.S. Geological Survey, test well 5	upper Floridan; upper Floridan; and post-Floridan age;
Liberty	<u>34N089</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Long	<u>22M004</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Lowndes	<u>19E009</u>	City of Vidalia	upper Floridan; upper Floridan; and post-Floridan age;
Madison	<u>19HH12</u>	Mendenhall Estates	upper Floridan; upper Floridan; and post-Floridan age;
McIntosh	<u>35M013</u>	U.S. Fish and Wildlife Service	upper Floridan; upper Floridan; and post-Floridan age;
Miller	<u>07H032</u>	U.S. Geological Survey, test well DP-2	upper Floridan; upper Floridan; and post-Floridan age;
Miller	<u>07H033</u>	U.S. Geological Survey, test well DP-3	upper Floridan; upper Floridan; and post-Floridan age;
Miller	<u>08G001</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;
Mitchell	<u>10G315</u>	U.S. Geological Survey, test well 1	upper Floridan; upper Floridan; and post-Floridan age;



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Table 3b. Observation wells for which hydrographs are included in this report.

County	Well identification number	Site name
<i>Surficial aquifer</i>		
Spalding	11A A01	University of Georgia Experiment Station
Lamar	12Z001	Dixie Pipeline
Miller	07H003	U.S. Geological Survey, test well DP-3
Decatur	09G003	U.S. Geological Survey, test well DP-6
Mitchell	11J013	U.S. Geological Survey, test well DP-12
Worth	13M007	U.S. Geological Survey, test well DP-9
Wayne	32L017	Georgia Geologic Survey, Gardi, test well 3
Glynn	33H208	Georgia-Pacific, south, test well 2
Glynn	34H438	Georgia Geologic Survey, Coffin Park, test well 1
Glynn	34H447	Char. County Courthouse building
Chatham	35F094	University of Georgia, Bamboo Farm well
Chatham	37P116	Georgia Geologic Survey, Old Navy Institute, test well 4
<i>Upper Brunswick aquifer</i>		
Bulloch	31J009	Georgia Geologic Survey, Stone Hill, test well 1
Wayne	32L016	Georgia Geologic Survey, Gardi, test well 2
Glynn	34H437	Georgia Geologic Survey, Coffin Park, test well 1
<i>Floridan aquifer system</i>		
Grady	12F036	U.S. Geological Survey, Olin
Ware	27F003	U.S. Geological Survey, test well 1
Bulloch	31J008	Georgia Geologic Survey, Hayfield, test well 1
<i>Upper Floridan aquifer: southwestern area</i>		
Seminole	06H001	Roddenberry Company Farm, test well 1
Miller	07H002	U.S. Geological Survey, test well DP-2
Miller	08G001	Wierocks
Early	08K001	Emblem, test well 1
Decatur	09H520	Graham Bolton
Decatur	09G001	U.S. Geological Survey, test well DP-4
Mitchell	10G312	Hayes Meinders
Calhoun	10H005	Shiloh, Florida well
Mitchell	11J012	U.S. Geological Survey, test well DP-11
Dougherty	11K003	Wilton, test well, north
Dougherty	11K015	U.S. Geological Survey, test well 13
Baker	12K014	Blue Springs, observation well
Dougherty	12H028	Tanner, Mustrove
Dougherty	12K022	U.S. Geological Survey, test well 13
Dougherty	12K029	U.S. Geological Survey, test well 15
Dougherty	12L339	Albany Hall Field, south observation well
Lee	12H012	U.S. Geological Survey, test well 19
Mitchell	13H04	Appling, test well
Dougherty	13H014	U.S. Geological Survey, test well 15

Dougherty	111111	Geological Survey and Dougherty County
Dougherty	111121	Geological Survey, test well 3
Dougherty	111131	Geological Survey, test well 7
Dougherty	111141	Geological Survey
Worth	111151	Geological Survey, test well DP-8
Worth	111161	Geological Survey

Upper Floridan aquifer - Brunswick County

Cook	111171	Geological Survey, test well
Tift	111181	Geological Survey, test well 1
Downsides	111191	Geological Survey

Upper Floridan aquifer - Wilkes County

Laurens	111201	Geological Survey
Montgomery	111211	Wilkes County Board of Education
Recombs	111221	Geological Survey

Upper Floridan aquifer - Wilkes County

Bulloch	111231	Geological Survey, test well 1
Liberty	111241	Geological Survey, test well 1
McIntosh	111251	Geological Survey, test well 1
Chatham	111261	Geological Survey
Chatham	111271	Geological Survey
Chatham	111281	Geological Survey, test well 2
Chatham	111291	Geological Survey
Chatham	111301	Geological Survey, test well 3
Chatham	111311	Geological Survey, test well 6
Chatham	111321	Geological Survey, test well 7

Upper Floridan aquifer - Wilkes County

Wayne	111331	Geological Survey, test well 1
Wayne	111341	Geological Survey, test well 1
Long	111351	Geological Survey, test well 3
Glynn	111361	Geological Survey, test well 1

Upper Floridan aquifer - Brunswick County - water-bearing zone

Glynn	111371	Geological Survey, test well 6
Glynn	111381	Geological Survey, test well 2
Glynn	111391	Geological Survey, test well 7
Glynn	111401	Geological Survey, test well 9
Glynn	111411	Geological Survey, test well 11
Glynn	111421	Geological Survey, test well 12

Upper Floridan aquifer - Brunswick County - water-bearing zone

Glynn	111431	Geological Survey, test well 13
Glynn	111441	Geological Survey, test well 4
Glynn	111451	Geological Survey, test well 8
Glynn	111461	Geological Survey, test well 14

Upper Floridan aquifer - St. George Island

Charlton	111471	Geological Survey, test well OX-5
Camden	111481	Geological Survey, test well 1
Camden	111491	Geological Survey, test well 2
Camden	111501	Geological Survey, test well 3
Camden	111511	Geological Survey, test well 4
Camden	111521	Geological Survey, test well 5

Lower Floridan aquifer

Glynn	111531	Geological Survey, test well 1
Glynn	111541	Geological Survey, test well 2

Lower Floridan aquifer - Brunswick County

Glynn	<u>34H391</u>	U.S. Geological Survey, test well 16
Glynn	<u>34H436</u>	Georgia Geologic Survey, Coffin Park, test well 1
<i>Lower Floridan aquifer: Fernandina permeable zone</i>		
Glynn	<u>33H188</u>	U.S. Geological Survey, test well 26
<i>Gordon aquifer system</i>		
Burke	<u>32Y033</u>	Brigance Landing, test well 3
<i>Claiborne aquifer</i>		
Early	<u>06K010</u>	Georgia Geologic Survey, Kolomoki Mounds State Park, test well 3
Randolph	<u>09M009</u>	C.T. Martin, test well 1
Mitchell	<u>11K011</u>	U.S. Geological Survey, test well DP-10
Dougherty	<u>11K002</u>	U.S. Geological Survey, test well 11
Dougherty	<u>11L001</u>	U.S. Geological Survey, test well 4
Lee	<u>11P015</u>	Pete Long, test well 1
Dougherty	<u>12L019</u>	U.S. Geological Survey, test well 5
Lee	<u>12L001</u>	U.S. Geological Survey, test well 8
Dougherty	<u>13L011</u>	U.S. Geological Survey, test well 2
Dougherty	<u>13L015</u>	Miller Brewing Company
Worth	<u>13K005</u>	U.S. Geological Survey, test well DP-7
Crisp	<u>14P015</u>	Georgia Geologic Survey, Veterans Memorial State Park, test well 2
<i>Clayton aquifer</i>		
Early	<u>06K009</u>	Georgia Geologic Survey, Kolomoki Mounds State Park, test well 1
Randolph	<u>09N001</u>	City of Outhbert
Randolph	<u>09M007</u>	C.T. Martin, test well 3
Dougherty	<u>11K005</u>	U.S. Geological Survey, test well 12
Dougherty	<u>11L002</u>	Georgia Geologic Survey, Albany Nursery
Lee	<u>11P014</u>	Pete Long, test well 1
Dougherty	<u>12L020</u>	U.S. Geological Survey, test well 6
Lee	<u>12P002</u>	U.S. Geological Survey, test well 9
Dougherty	<u>13L002</u>	Albany Water, Gas, and Light Commission, Turner City 2
Dougherty	<u>11L013</u>	U.S. Geological Survey, test well 7
Crisp	<u>14P014</u>	Georgia Geologic Survey, Veterans Memorial State Park, test well 1
<i>Cretaceous aquifers and aquifer systems</i>		
Chattahoochee	<u>06S001</u>	U.S. Army, Fort Benning
Dougherty	<u>11L001</u>	U.S. Geological Survey, test well 13
Pulaski	<u>11L001</u>	U.S. Geological Survey, Arrowhead test well 1
Twiggs	<u>11L001</u>	Georgia Geologic Survey, U.S. Geological Survey, test well 3
Laurens	<u>21L004</u>	Georgia Department of Natural Resources, Laurens No. 3
Washington	<u>21L001</u>	City of Columbus, test well 1
Johnson	<u>21L001</u>	U.S. Geological Survey, test well 1
Burke	<u>21L001</u>	U.S. Geological Survey, test well 1
Richmond	<u>21L001</u>	Richmond County Water System, U.S. Geological Survey, McBean 2
Burke	<u>21L001</u>	Brigance Landing, test well 1
Burke	<u>21L001</u>	Brigance Landing, test well 2
Chatham	<u>21L001</u>	U.S. Geological Survey, Ponce de Leon Island, test well 2
Chatham	<u>21L001</u>	U.S. Geological Survey, Ponce de Leon Island, test well 1
<i>Paleozoic-rock aquifers</i>		
Walker	<u>01L001</u>	U.S. Geological Survey, Park Station, Okefenokee National Wildlife Refuge
Gordon	<u>01L001</u>	U.S. Geological Survey, test well 1
<i>Crystalline-rock aquifers</i>		
Cherokee	<u>01L001</u>	U.S. Geological Survey, test well 1

Fulton	<u>102111</u>	U.S. Geological Survey, test well 1
DeKalb	<u>11FF04</u>	U.S. Geological Survey, test well 5
Dawson	<u>12104</u>	U.S. Geological Survey, test well 1
White	<u>15MM03</u>	White House Park, well 4
Madison	<u>193112</u>	Madison Lake Estates
Greene	<u>21B304</u>	Greene Valley

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Table 4. Observation wells for which hydrographs are included in this report, by well identification number [USGS, U.S. Geological Survey]

Well identification number	USGS site identification number	Well identification number	USGS site identification number	Well identification number	USGS site identification number
03PP01	345403085160001	12M019	313812084125001	32Y030	330548081391101
06F001	305356084534601	12M017	313808084093601	32Y031	330548081391102
06K009	312827084551501	12Z001	330858084122901	32Y033	330548081391103
06K010	312827084551503	13K014	312127084003801	33D009	304315081390001
06S001	322036084590301	13L001	312704084071601	33E007	304512081343601
07H002	311009084495502	13L001	313584084012301	33F027	304756081311101
07H003	311009084495503	13L001	313740084000301	33F040	304748081335301
07KK64	342927084511601	13L011	313108084064301	33F051	304850081342001
07N001	314607084473701	13L012	313108084064302	33H127	311007081301701
08G001	310651084494501	13L017	313108084064302	33H133	311007081301702
08K001	312230084391701	13L018	313086084015001	33H188	310810081323501
09F520	305736084555801	13L018	313001084003501	33H206	310925081312201
09G001	310428084010501	13L019	310911084010501	33H206	310925081312202
09G003	310428084010503	13L022	314888084008401	33H206	310925081312203
09JJ02	3419130844225301	13M008	314007084010401	33H206	311633081324001
09M007	313958084361202	13M017	314007084010401	33H206	311633081324001
09M009	313958084361201	14H014	315731084010301	34H105	310906081293201
10DD02	334207084054601	14P017	315731084010301	34H105	310938081295701
10G313	310507084032201	15T079	313108084010301	34H105	310938081295702
10K005	312858084275701	15T081	344910084000001	34H105	310938081295701
11AA01	331507084171801	18H015	310810084003001	34H105	310924081295202
11FF04	335511084061001	18H015	310810084003001	34H105	310924081295202
11J011	311802084192301	18H015	310810084003001	34H105	310924081295202
11J012	311802084192302	18H015	310810084003001	34H105	310924081295202
11J013	311802084192303	18H015	310810084003001	34H105	310924081295202
11K002	312651084210102	18H015	310810084003001	34H105	310924081295202
11K003	312918084152801	18H015	310810084003001	34H105	310924081295202
11K005	312651084210103	18H015	310810084003001	34H105	310924081295202
11K015	312707084061701	18H015	310810084003001	34H105	310924081295202
11L001	313536084003202	18H015	310810084003001	34H105	310924081295202
11L002	313536084003201	18H015	310810084003001	34H105	310924081295202
11P014	315358084192501	18H015	310810084003001	34H105	310924081295202
11P015	315358084192502	18H015	310810084003001	34H105	310924081295202
12F036	305236084125101	20H01	304907084010301	34H105	310924081295202
12JJ04	342107084083301	20H01	310707084010301	34H105	310924081295202
12K014	312610084010701	20H01	310707084010301	34H105	310924081295202
12L019	313651084030301	20H01	310707084010301	34H105	310924081295202
12L020	313651084030301	20H01	310707084010301	34H105	310924081295202
12L021	313651084030301	20H01	310707084010301	34H105	310924081295202
12L028	313651084030301	20H01	310707084010301	34H105	310924081295202
12L029	313651084030301	20H01	310707084010301	34H105	310924081295202

<u>12L030</u>	313130084101001	<u>32L016</u>	313250081403503	<u>39Q003</u>	320122080510204
<u>12L339</u>	313014084112201	<u>32L017</u>	313250081403504		
<u>12M001</u>	313813084125001	<u>32R022</u>	321240081401501		

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Last updated Monday, 11-Sep-2000 12:30:37 EDT
 The URL for this page is <http://ga.water.usgs.gov/publications/ofr00-151/table4.html>



Ground-Water Conditions in Brainerd, 1996

USGS Open-File Report 00-515

Introduction

Water-level fluctuations in surficial aquifers were measured from 1996 to 1997 at 12 wells. Data from 10 of these wells are summarized in this report. Water-level fluctuations in surficial aquifers are mainly caused by variations in precipitation, evapotranspiration, and natural drainage. In addition, the water level in surficial aquifers in the Brainerd area is influenced by nearby pumping, precipitation, and local geology (Clayton and others, 1990, p. 24). Water levels in surficial aquifers generally rise rapidly during wet periods and decline slowly during dry periods. Prolonged droughts may cause water levels to decline below pumping levels, particularly for those located on hillsides and steep slopes, resulting in temporary ponding in the area. Areas of the surficial aquifers referred to in this report include: northern Brainerd area.

Location

Water levels in the surficial aquifers in the northern Brainerd area were measured from 12 wells in 1996. Data from 10 of these wells are available as PDF files, accessible by clicking on the well numbers in the map below or from [Figure 2](#).

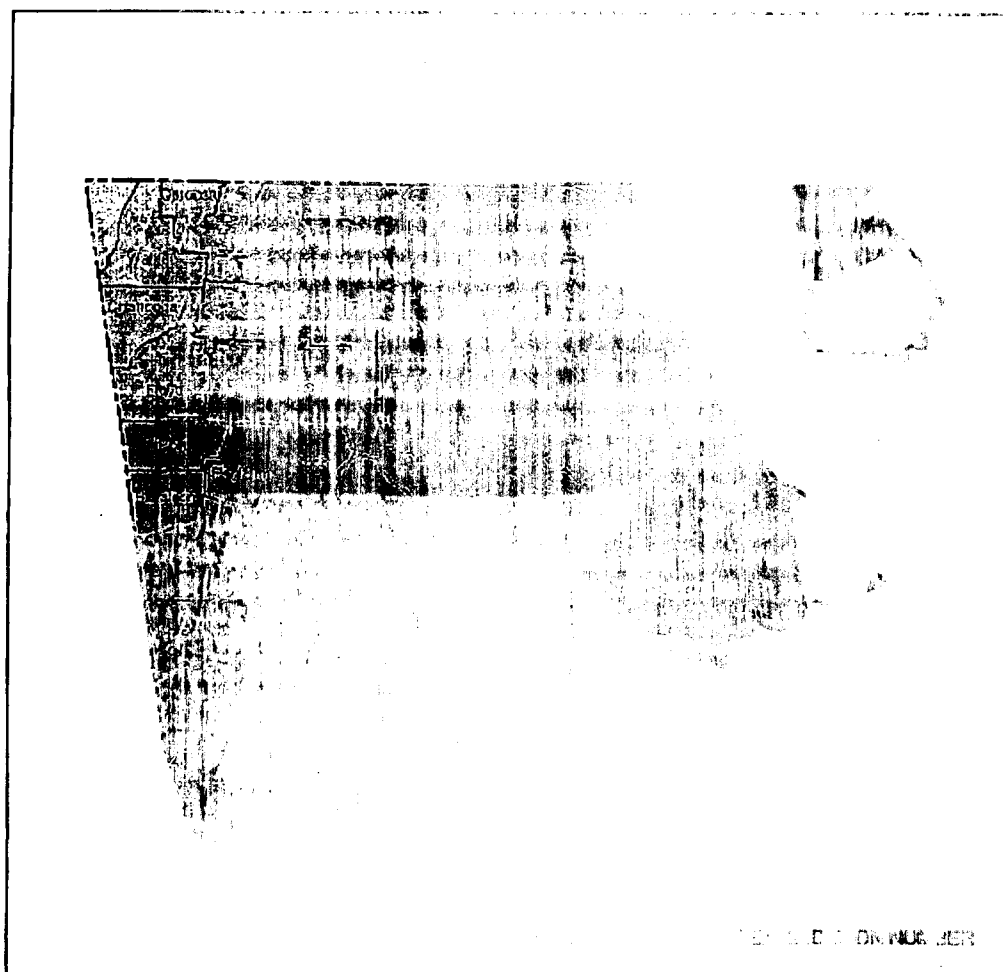


Figure 2. Location of wells in the northern Brainerd area.

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Recent USGS publications on Surficial Aquifer Water Resources Information:
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Ground-Water Conditions in Georgia, 1969

USGS Open-File Report 83-719

References

S. J. Dineen

Water levels were monitored in four wells that are similar to others in the southwestern area in 1999. Data from these wells are available at GWR.nrc.gov, by clicking on the link in the map below or from Table 3b.

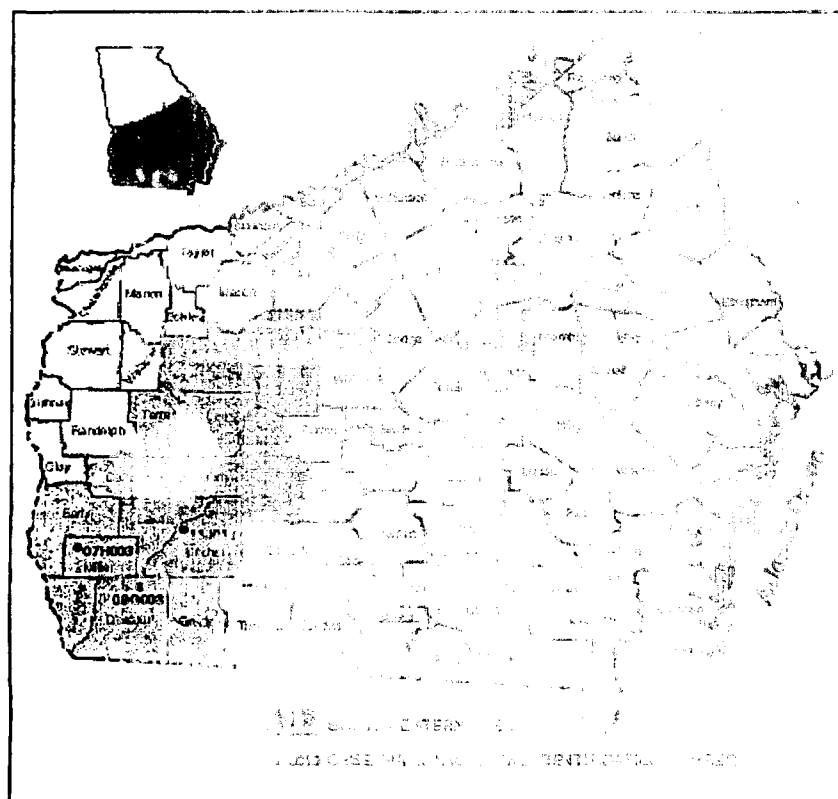


Figure 5. Location of sampling points in the two fish distribution areas.

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USGS Open-File Report 2005-115

Water levels in six coastal wells in the coastal zone were monitored from 1970 to 1989. Data from these wells are available as PDF files at the following URL:

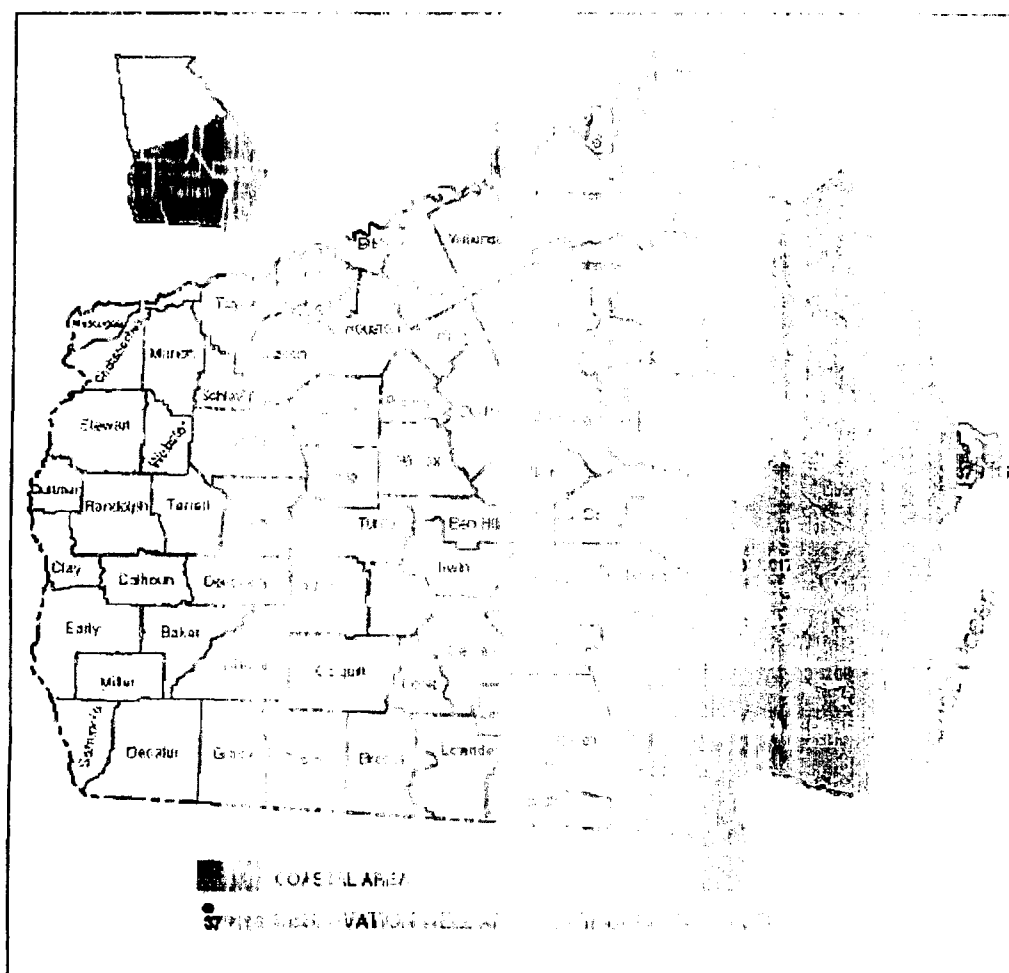


Figure 10. Location of observation wells compared to land use, offshore, coastal, and nearshore.

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Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

Upper Brunswick Aquifer

The water level in the upper Brunswick aquifer was monitored in four wells in 1999 and data for three of these wells are available as PDF files, accessible by clicking on the well number in the map below or from [Table 3b](#). The upper Brunswick aquifer responds to pumping from the Upper Floridan aquifer as a result of the hydraulic connection between the aquifers ([Clarke and others, 1990, p. 23](#)). Elsewhere, the water level mainly responds to seasonal variations in recharge and discharge.

The upper Brunswick aquifer in Gwinnett County is under unconfined conditions and is influenced by variations in recharge from precipitation and by pumping from the Upper Floridan aquifer ([Clarke and others, 1990, p. 28](#)). In the Wayne and Glynn County areas, the upper Brunswick aquifer is confined and responds to nearby pumping ([Clarke and others, 1990, p. 28](#)).

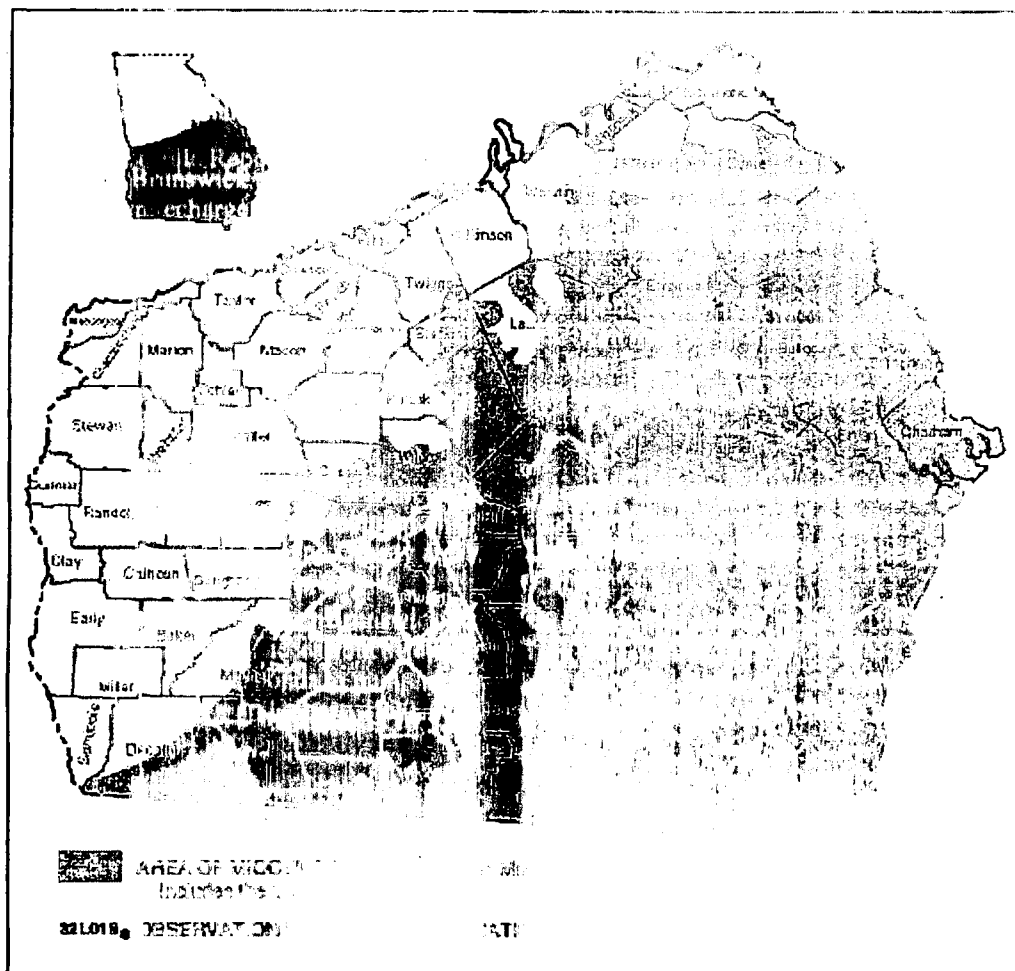


Figure 17. Location of wells in the Upper Brunswick aquifer. (The extent of the area of Micocene deposits shown.)

Recent USGS publications on Ground-Water Conditions in the Ogishkash River Basin
Last updated by: [Name] on [Date]
The URL for this page is <http://www.water.usgs.gov/ofr/ofr00-515/ogishkash.html>



USGS Open-File Report 03-11

On September 15, 1992, the Atlantic Weather Service in Miami reported that the tropical storm approach of Hurricane Floyd threatened to bring heavy rain and strong winds to the coastal cities, including Savannah. The wind speed in the coastal cities and industrial water treatment in the area temporarily ceased on September 15. The water treatment plant in Savannah closed during the 3 days.

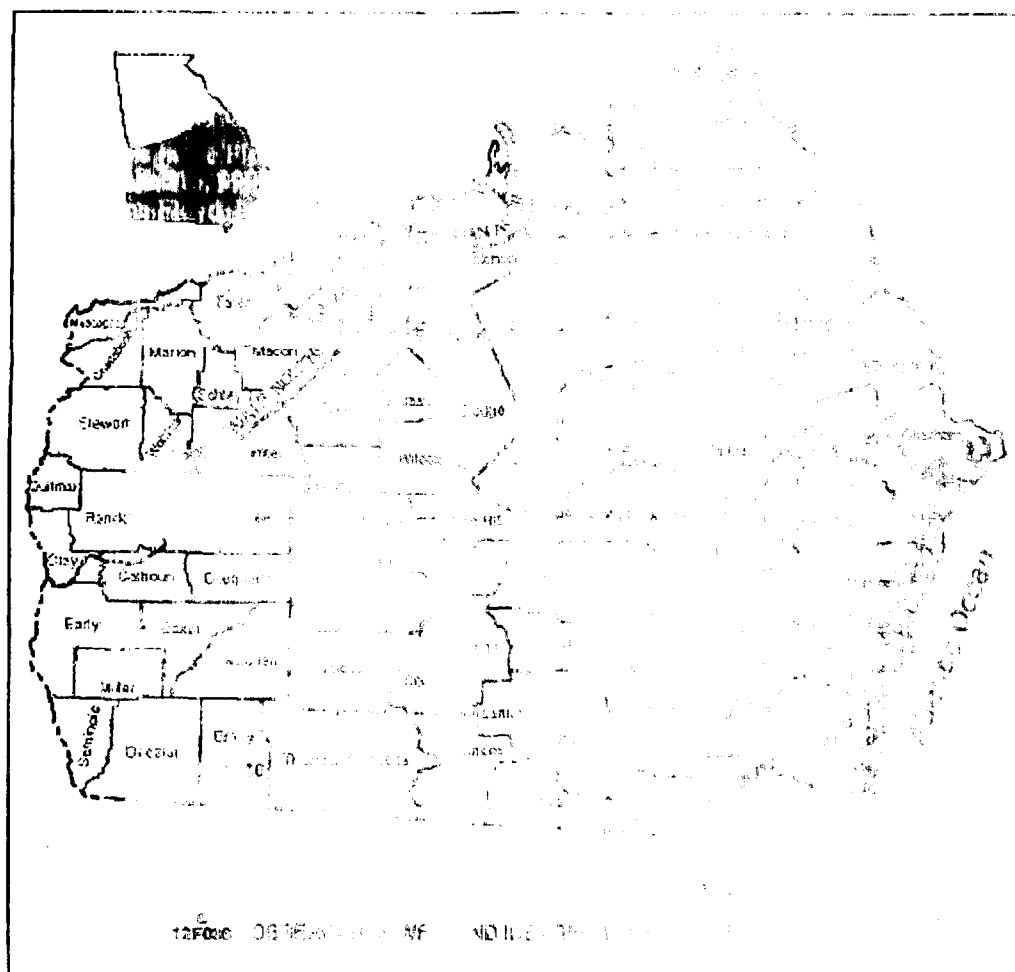


Figure 21. Location of observation wells completed in the Floridan aquifer system.

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[Recent USGS publications on Ground-Water Conditions Information](#)

Last updated Monday, 15 Oct 2006 15:14:53 EDT

The URL for this page is <http://ga.water.usgs.gov/publications/ofr00-151/floridan.html>

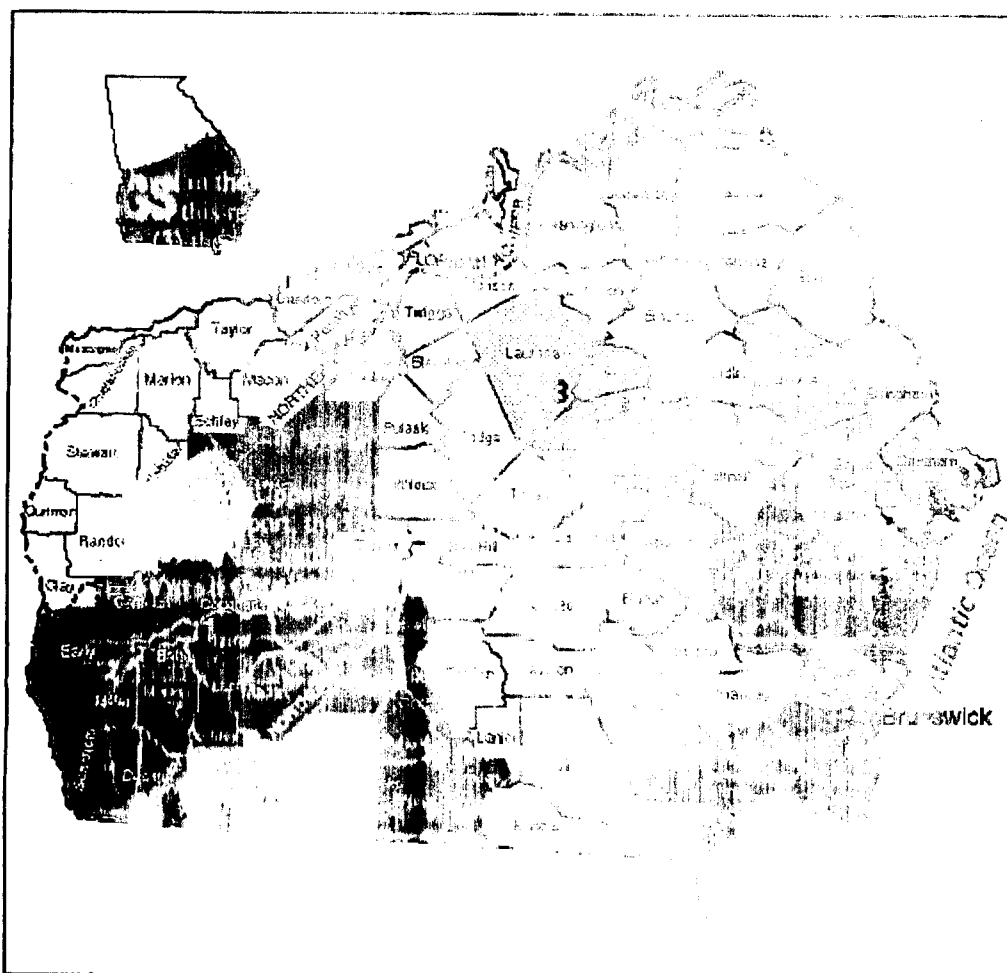


Ground-Water Conditions in Georgia 1999

USGS Open-File Report 00-515

Upper Floridan Aquifer

The water level in the Upper Floridan aquifer is monitored by wells and one for six of these wells are summarized in this report. In this report, the Upper Floridan aquifer is divided into seven areas: (1) the south-western area; (2) the south-central area; (3) the east-central area; (4) the Savannah area; (5) the eastern coastal area; (6) the Brunswick area; and (7) the St. Marys-Okefenokee area. These areas were needed on the basis of similar hydrologic settings.



Upper Floridan Aquifer

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Groundwater in the Flint River Basin, Georgia

USGS Open-File Report 2001-13

The water levels in the unconsolidated aquifers in the Flint River Basin are affected by precipitation, stream flow, and tidal action. These wells are available as *public files*, however, they are not available as *public files* because the southeastern part of the basin is a *public file* area. The water levels in the unconsolidated aquifers are hydraulically connected to the stream bed and its tributaries. The water levels in the unconsolidated aquifers are also influenced by precipitation.

more than 100 wells in 1999; data for 25 of these wells are shown in *Table 3b*. In the southeastern part of the basin, the water levels are influenced by precipitation, stream flow, and tidal action. The water levels are also influenced by precipitation, stream flow, and tidal action.

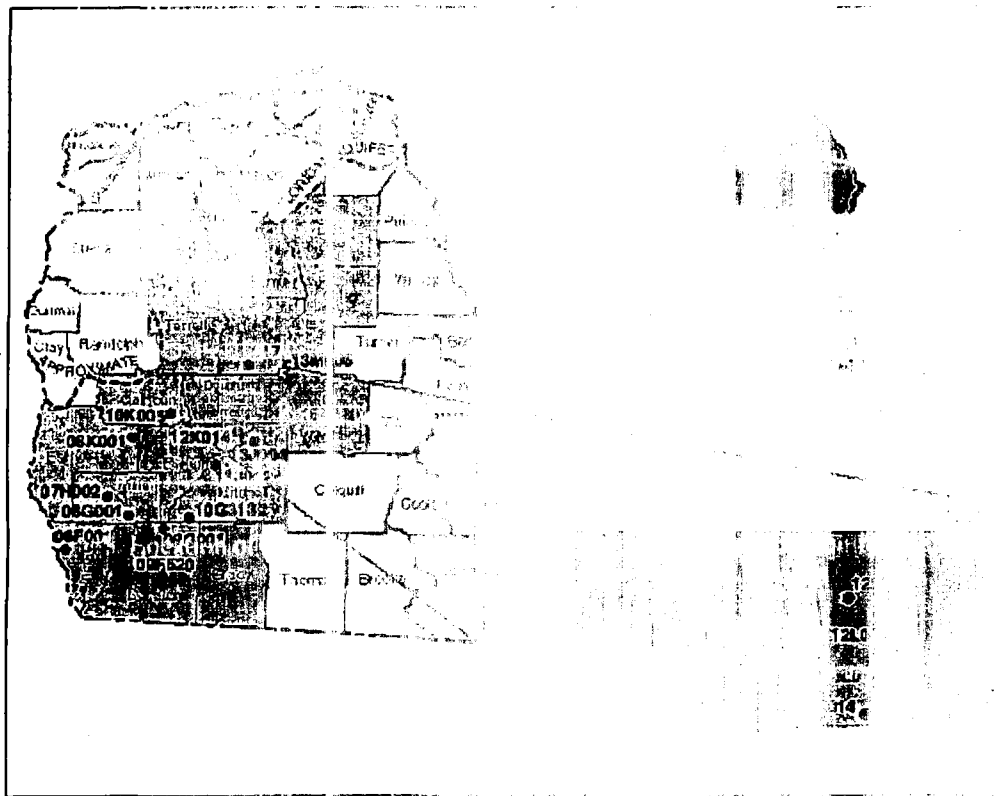


Figure 25. Location of observation wells in the unconsolidated aquifers in the Flint River Basin, Georgia.

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Ground-Water Conditions in Georgia, 1999

USGS Open-File Report OFR-00-515

Upper Floridan aquifer

South-central area

The water level in the Upper Floridan aquifer in south-central Georgia was monitored in three wells in 1999 and data from these wells are available in Table 3b, accessible by clicking on the well number in the map below or from Table 3b. Water levels in wells tapping this aquifer in this area are affected by variation in precipitation, evapotranspiration, and to a lesser degree, pumping (Krause, 1979). In the Valdosta area (Lowndes County), water levels also are affected by streamflow (Krause, 1979). Streamflow is generally highest during the rainy seasons in winter and spring, and lowest in the fall. The Upper Floridan aquifer receives recharge from the Apalachicola River north of Valdosta where water from the river flows directly into sinkholes and large springs in the aquifer. In this area, increased precipitation and streamflow in winter and early spring result in higher ground-water levels. During most years, decreased precipitation and increased evapotranspiration in the summer result in lower streamflow and correspondingly lower ground-water levels.

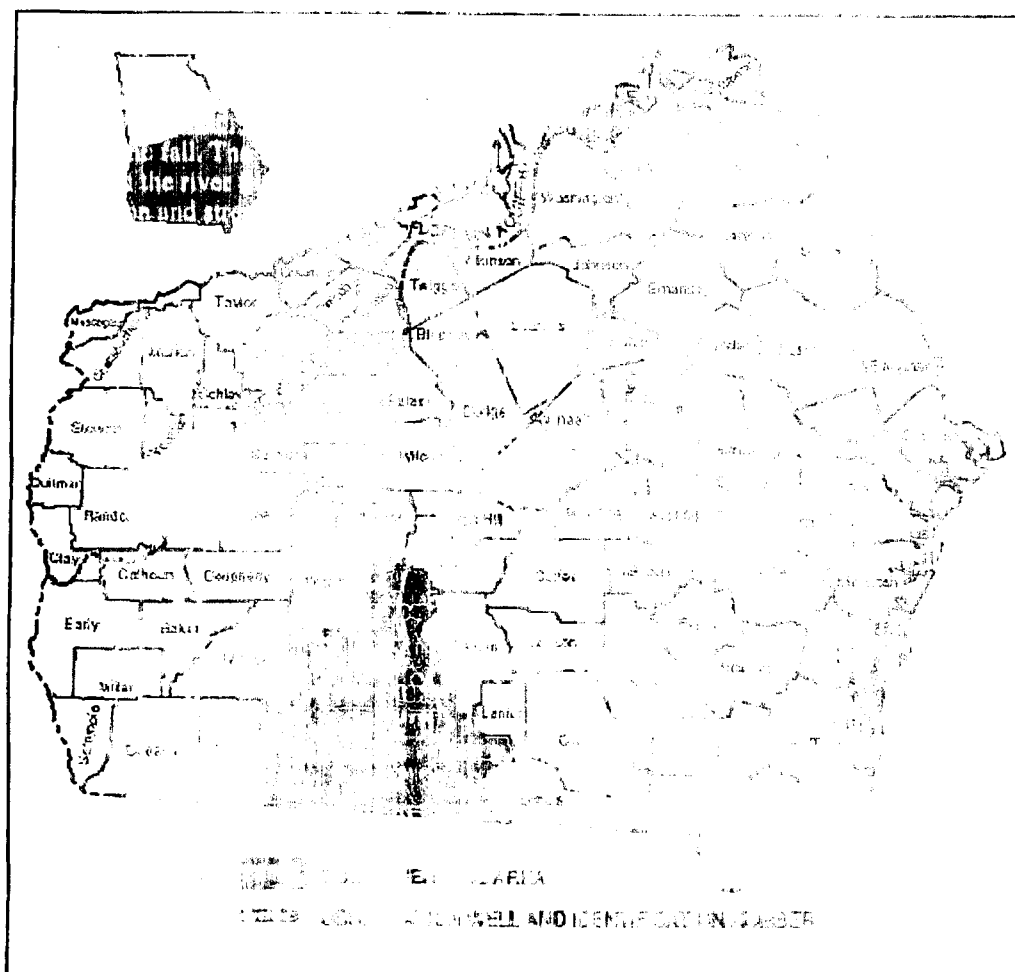


Figure 5b. Location of wells in the Upper Floridan aquifer in the south-central area.

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Recent USGS publications and information. [Non-Reservoirs Information](#).
Last updated: May 16, 2015. 2015
The URL for this page is <http://water.usgs.gov/ofr/ofr-00-515/sj.html>



Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

Upper Floridan aquifer

East-central area

The water level in the Upper Floridan aquifer in east-central Georgia was monitored in three wells in 1999 and data from these wells are available in this report, accessible by clicking on the well number in the map below or from [Table 3b](#). [Well 21T001](#) in Laurens County is located near the recharge area for the Upper Floridan aquifer, and the water level in this well responds mainly to seasonal variations in precipitation ([Kraus and Randolph, 1989](#)).

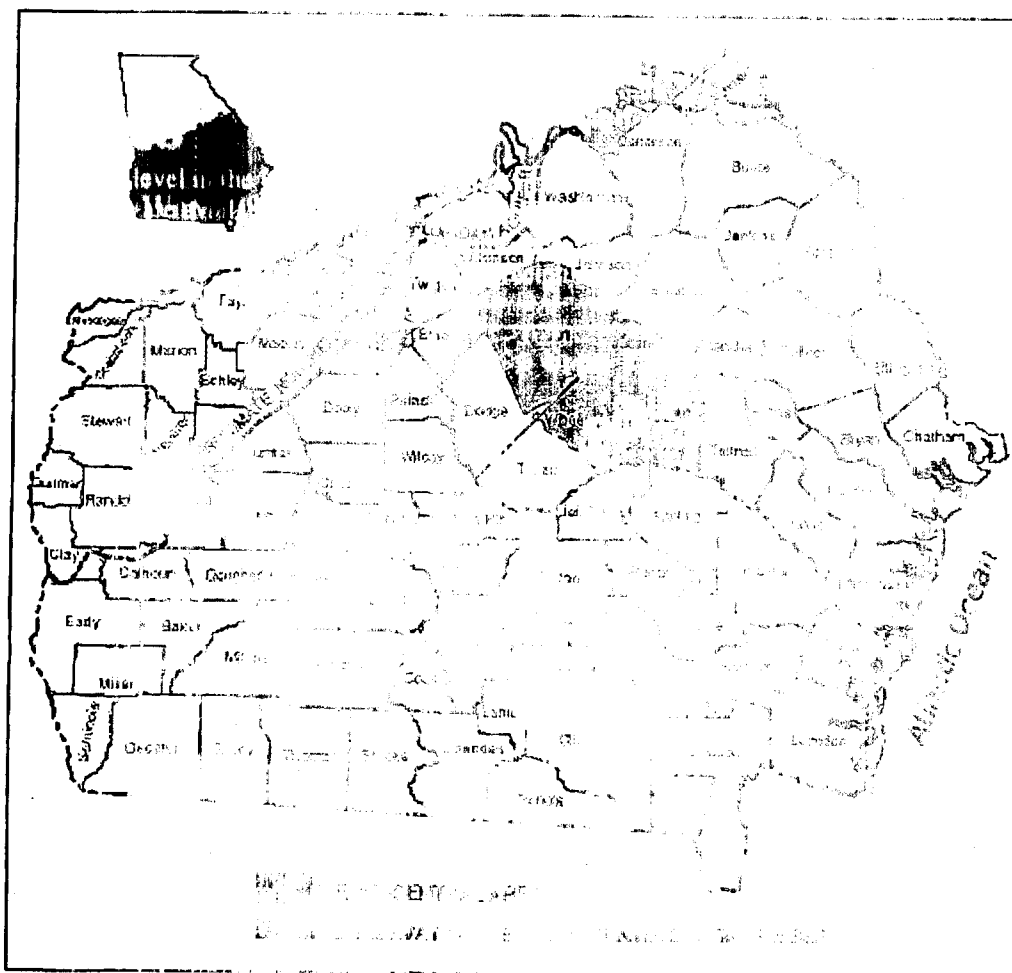


Figure 55. Location of observation wells completed in the Upper Floridan aquifer, east-central area.

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Ground-Water Conditions in Georgia, 1999

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Upper Floridan aquifer

Savannah area

The water level in the Upper Floridan aquifer in the Savannah area was monitored in 13 wells in 1999 and data from 10 of these wells are available. The locations of the wells are on the map below or from Table 3b. In this area, the water level in the Upper Floridan aquifer is mainly affected by pumping for public supply and industrial uses.

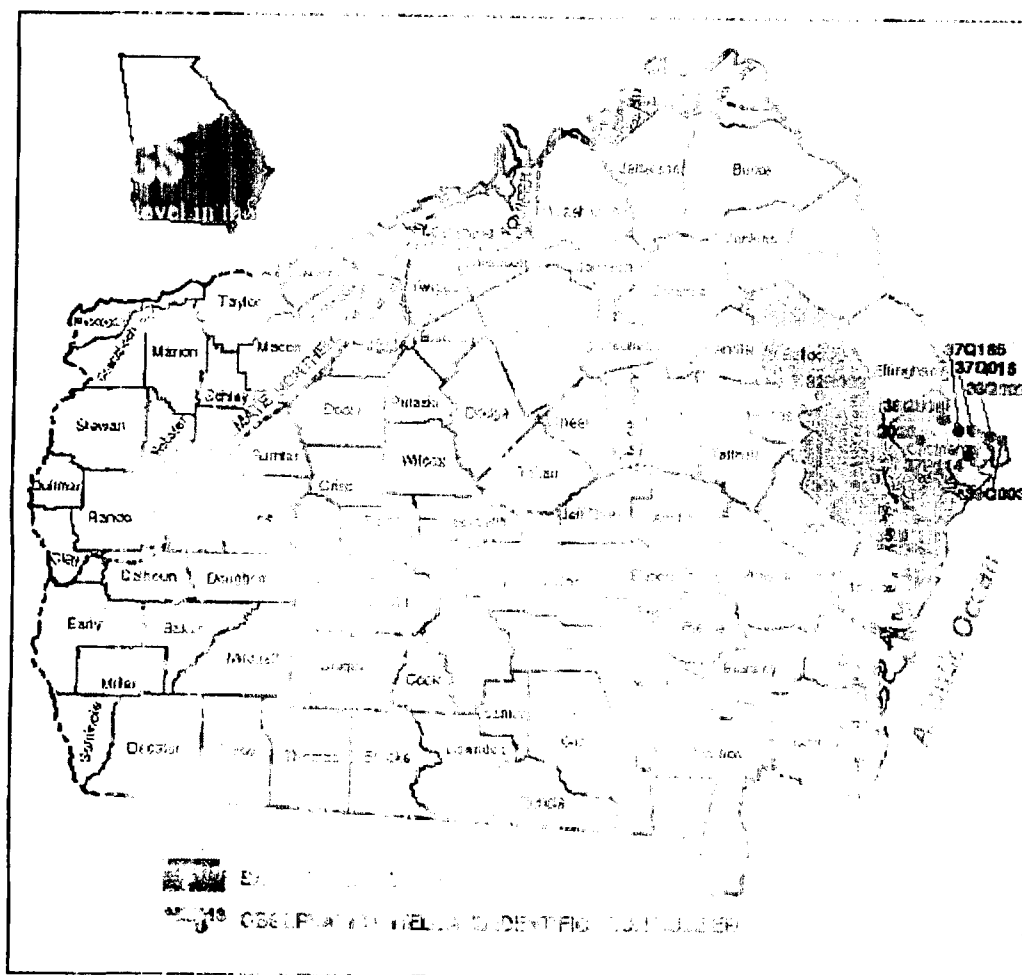


Figure 59. Location of observation wells sampled in the Upper Floridan aquifer, Savannah area.

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Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

Upper Floridan aquifer

Jesup-Doctortown area

The water level in the Upper Floridan aquifer in the Jesup-Doctortown area was monitored in three wells in 1998 and data from these wells are available in the report. For more information, click on the well number in the map below or from Table 3b. In this area, water levels in wells tapping the aquifer are affected mainly by industrial pumping at Doctortown, near Jesup.

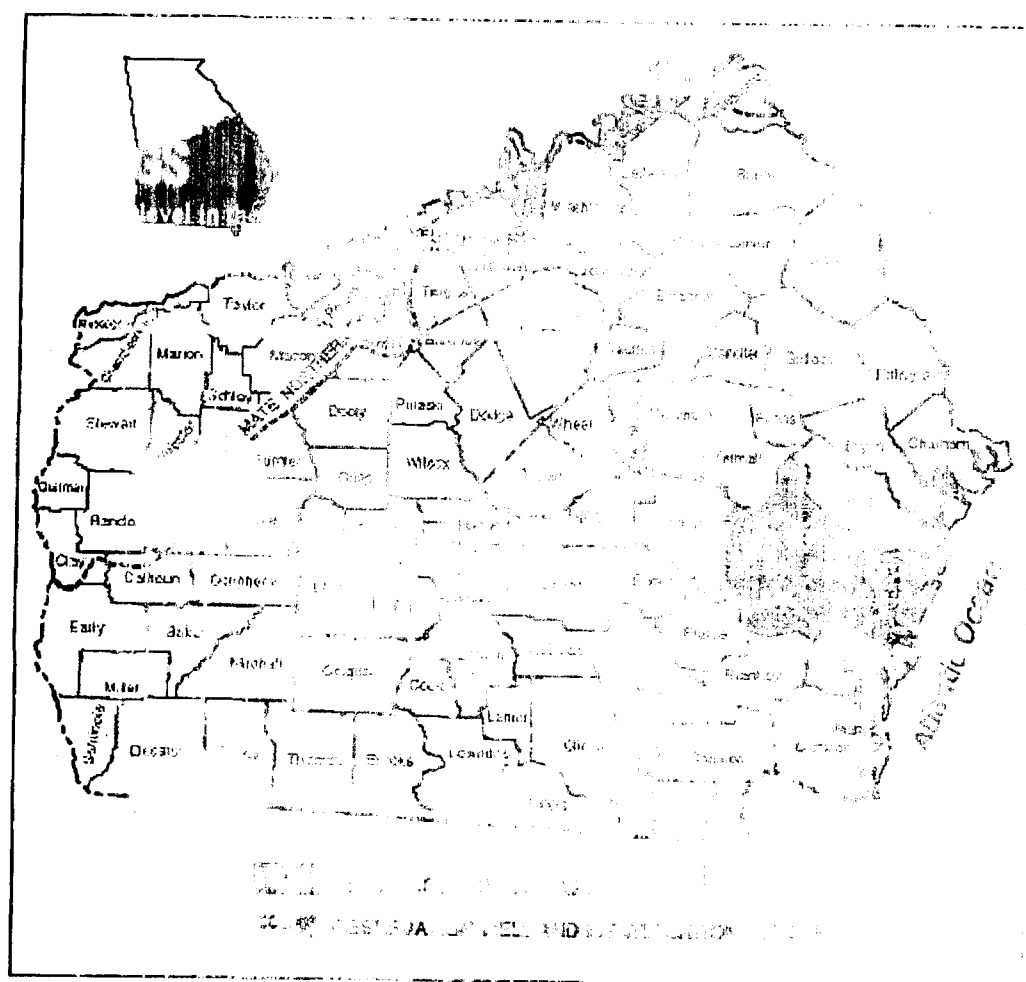


Figure 70. Location of observation wells completed in the Upper Floridan aquifer, Jesup-Doctortown area.

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Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

Upper Floridan aquifer

Brunswick area

The water level in the Upper Floridan aquifer in the Brunswick area was monitored in 13 wells in 1999 and data from 11 of these wells are available as PDF files. Clicking on the well number in the map below or from [Table 3b](#). In this area, water levels in wells tapping this aquifer are mainly affected by industrial pumping. Water levels in all wells showed a strong response to the decrease in pumping during the coastal evacuation for the passage of Hurricane Floyd. In the Brunswick area, the Upper Floridan aquifer includes the Brunswick aquifer, the upper water-bearing zone and the lower water-bearing zone.

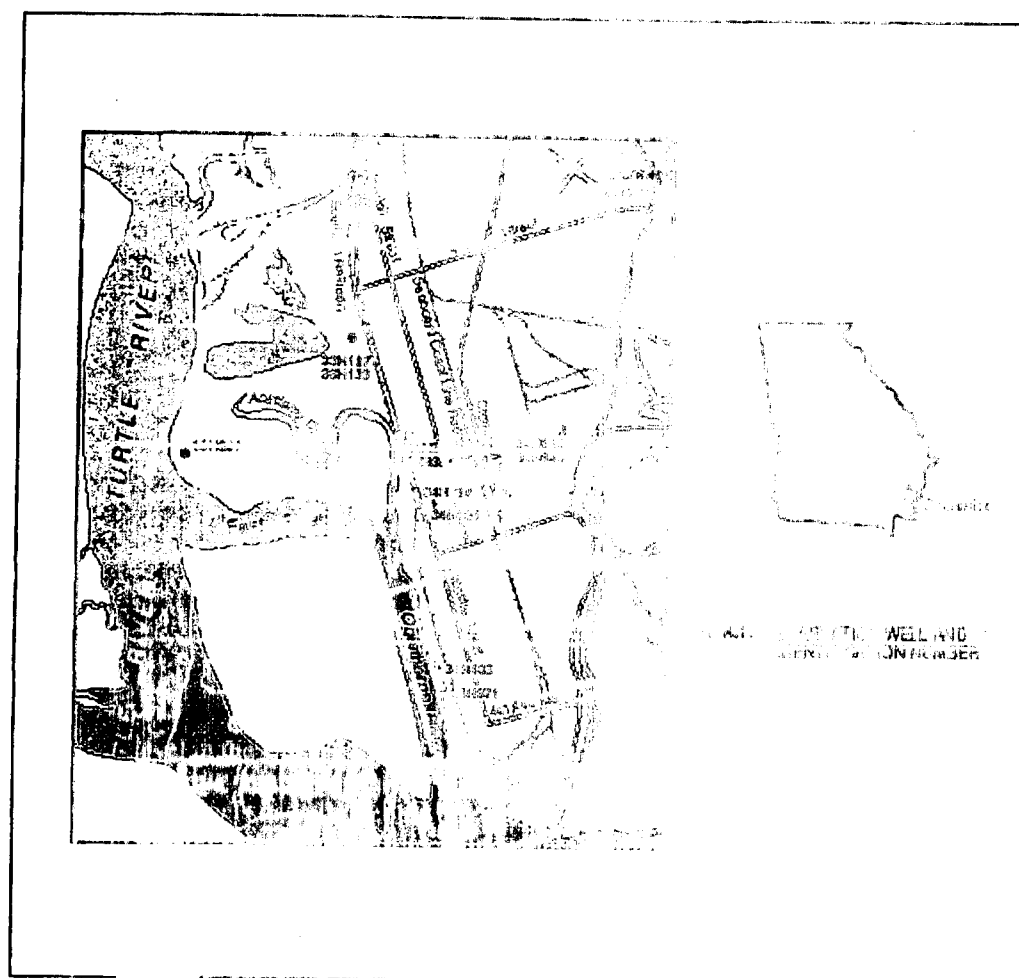


Figure 1. Location of observation wells completed in the Upper Floridan aquifer, Brunswick area.

Recent USGS Publication on Status of Georgia Water Resources
Last updated Monday 16-Jun-2008 15:14:23 EDT
The URL for this page is <http://ga.water.usgs.gov/publications/ofr00-515/uf-bruns.html>



Ground-Water Conditions in the St. Johns River-St. Marks-Okefenokee Swamp area

USGS Open-File Report 00-10

Upper Floridan aquifer

St. Marks-Okefenokee Swamp area

The water level in the Upper Floridan aquifer in the St. Johns River-St. Marks-Okefenokee Swamp area was monitored in six wells in 1999 and data from these wells are listed in Table 3b. The well number in the map below or from Table 3b. Water levels in wells tapping the aquifer are affected by industrial pumping.

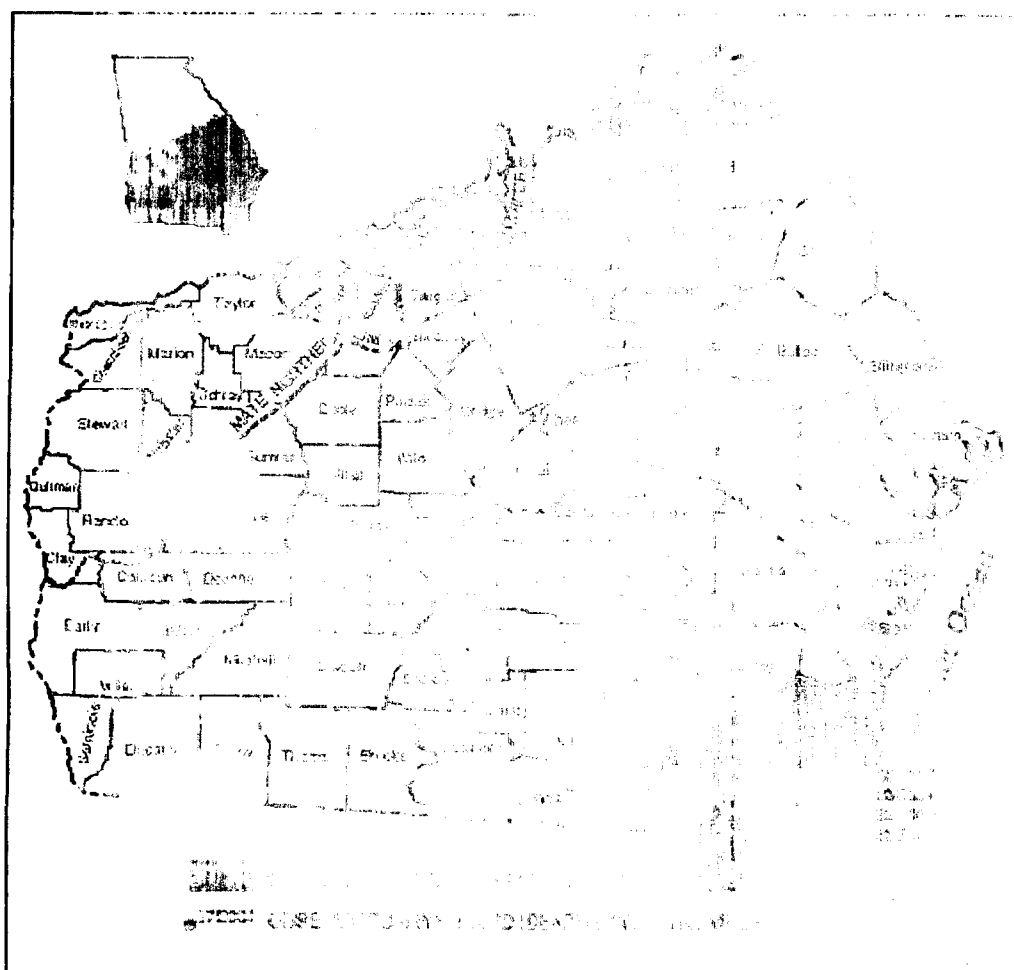


Figure 3b. Location of observation wells in the St. Johns River-St. Marks-Okefenokee Swamp area.

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Ground-Water Conditions in Georgia, 1999-2000

USGS Open-File Report 00-515

Lower Floridan aquifer, 1999-2000

The water level in the Lower Floridan aquifer was measured in 1999 and 2000 at 12 wells. Data from these wells are available as PDS files, accessible by clicking on the link below or from [Table 3b](#). Water levels in wells tapping the Lower Floridan aquifer are generally lower than those in the Upper Floridan aquifer (Krause and Poretsky, 1999). In the central part of the State, the Lower Floridan aquifer is a water zone, the deep freshwater zone, and the Fernandina sandstone is a

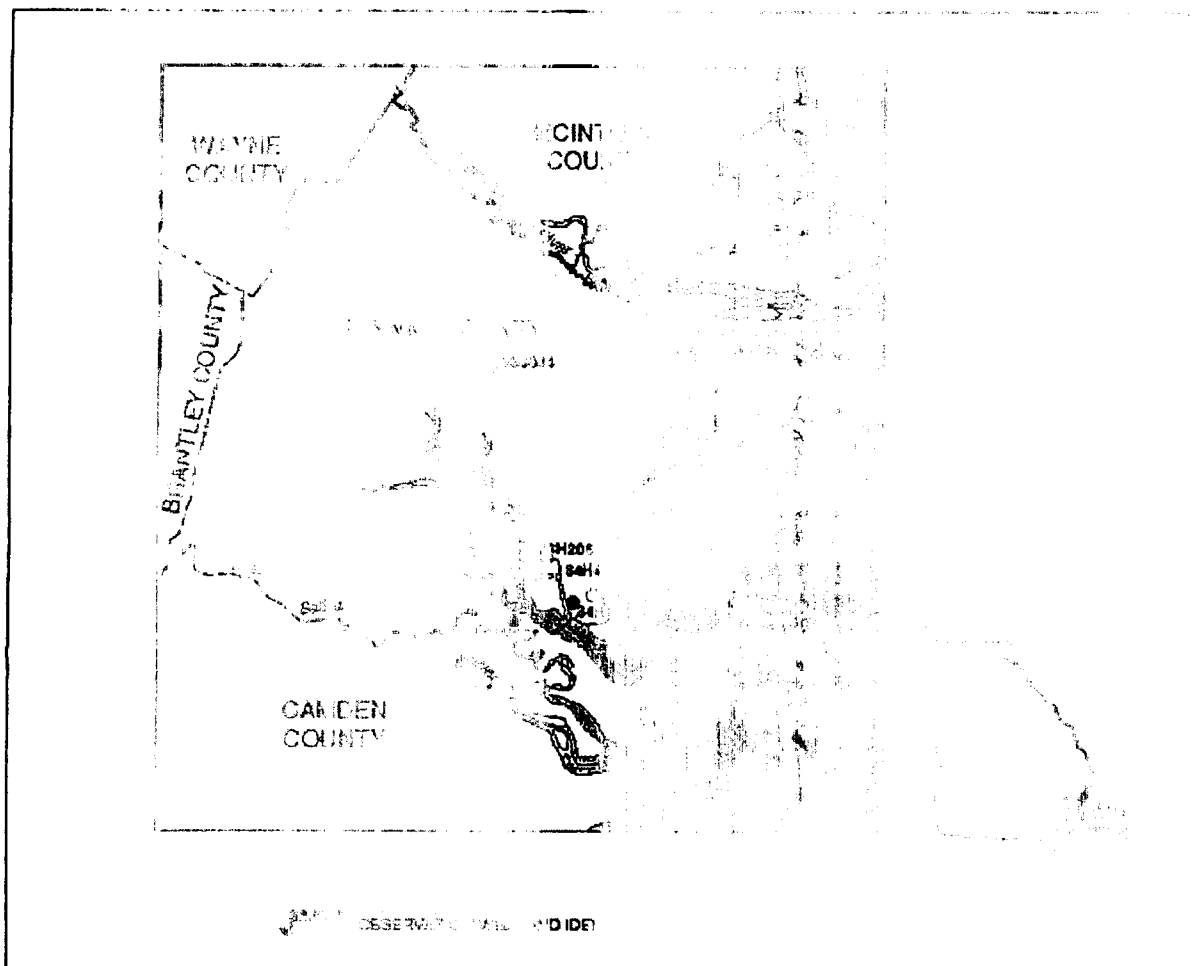


Figure 93. Location of observation wells completed in the Lower Floridan aquifer in the McIntosh County area.

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Ground-Water Conditions in the Gorgon Aquifer System

USGS Open-File Report 00-515

U.S. GEOLOGICAL SURVEY

The water level data for the Gorgon aquifer system are available as a PDF file, accessible by clicking on the file name. The Gorgon aquifer system are influenced by seasonal fluctuations in precipitation, recharge to the aquifer, and evapotranspiration (Clark and others, 1985).

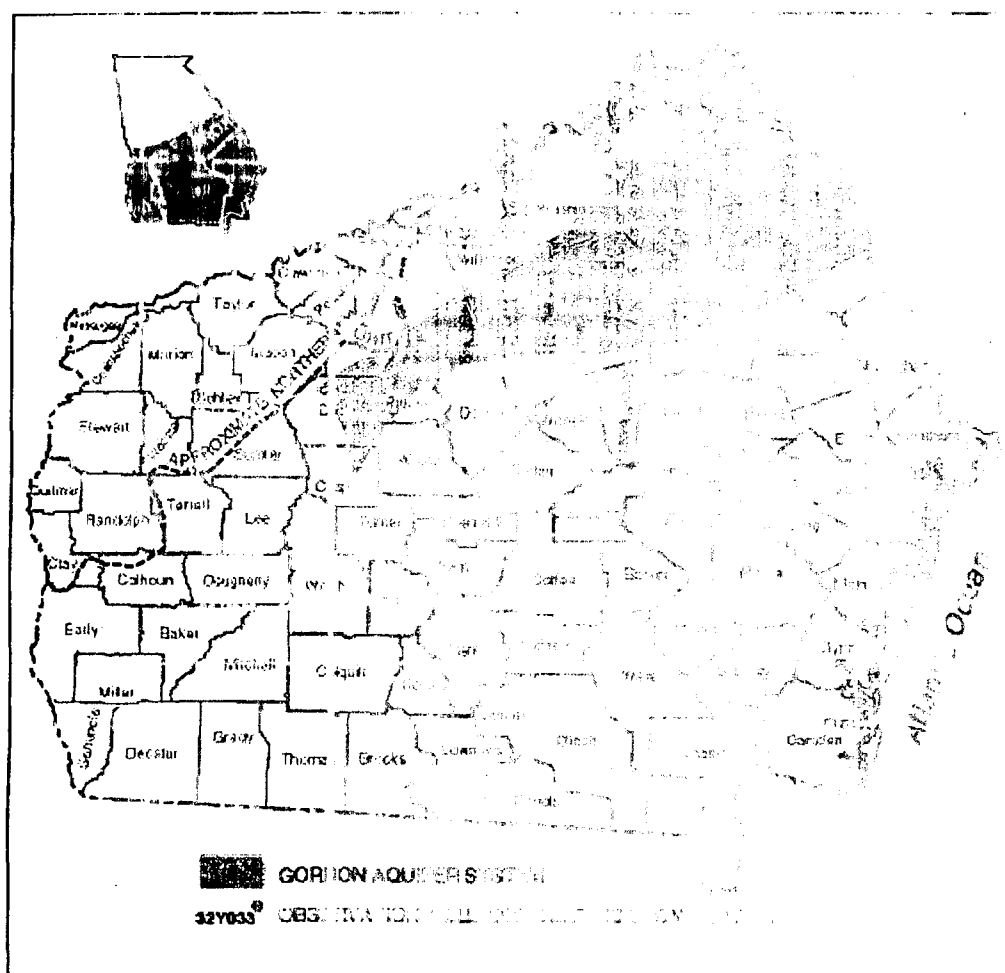


Figure 99. Location of observation well completed in the Gorgon aquifer system.

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Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

Claiborne Aquifer

The water level in the Claiborne aquifer is monitored by 19 wells. Water level data from these wells are available as PDF files, accessible by clicking on the well number in the right margin of this page. The water level in the Claiborne aquifer is affected mainly by precipitation and by local and regional pumping. The water level is generally highest following the winter and spring rainy seasons, and lowest during the summer dry season.

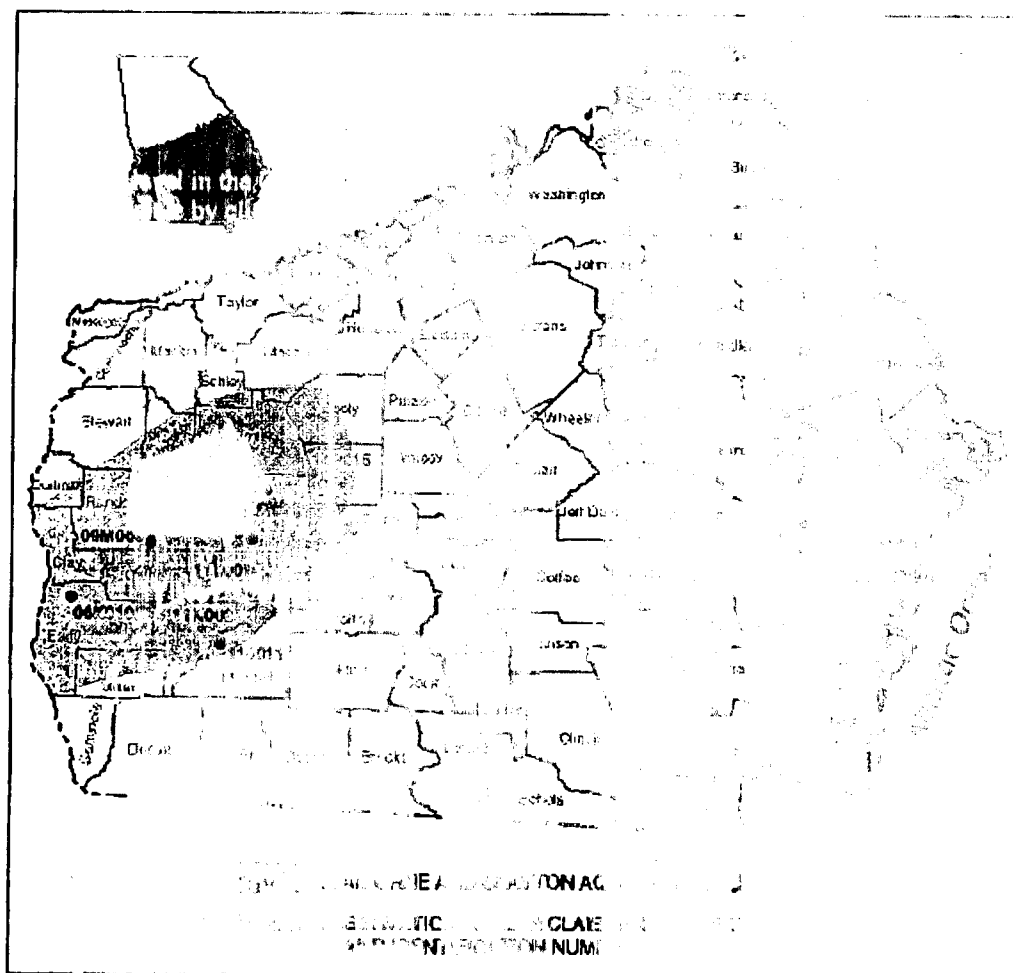


Figure 101. Location of observation wells completed in the Claiborne aquifer.

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USGS Open-File Report 00-113

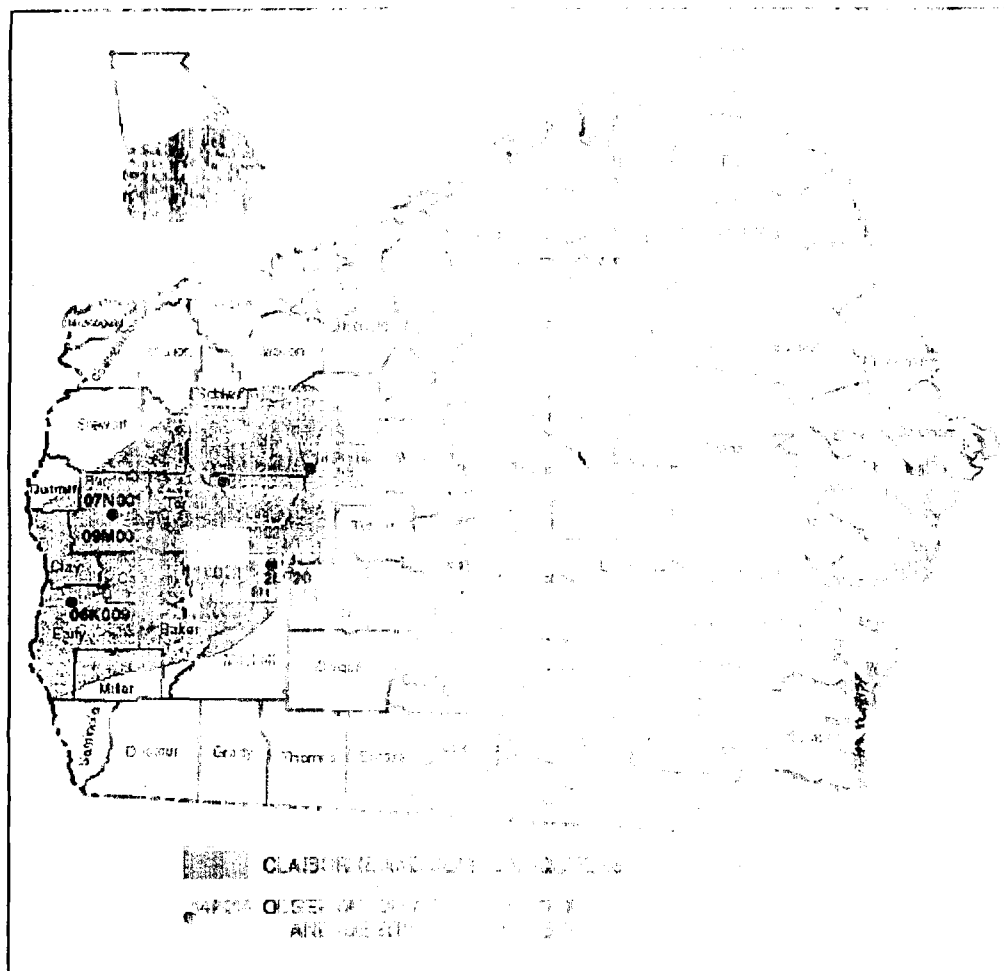
[illegible]

Figure 114. Location of observations (1981-1982) for *Chlamydomonas* spp. in the lower Hudson River.

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Ground-Water Conditions in Georgia, 1994

USGS Open-File Report 00-515

Cretaceous Aquifers

Water levels in Cretaceous aquifers and aquifer systems are available at 207 wells, of which 100 are open to the Cretaceous aquifers and aquifer systems. The Cretaceous aquifers and aquifer systems include the Dublin-Midville aquifer system, the Ocala aquifer system, and the Suwannee River aquifer system. The Dublin-Midville aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a). The Ocala aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a). The Suwannee River aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a). Wells 37Q186 and 38Q201 are open to sediments of lower geologic age than the Cretaceous aquifers and aquifer systems.

Dublin-Midville Aquifer System

The water level in the Dublin-Midville aquifer system is influenced by variations in precipitation and pumping (Clarke and others, 1985a). The Dublin-Midville aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a).

Dublin-Midville Aquifer System

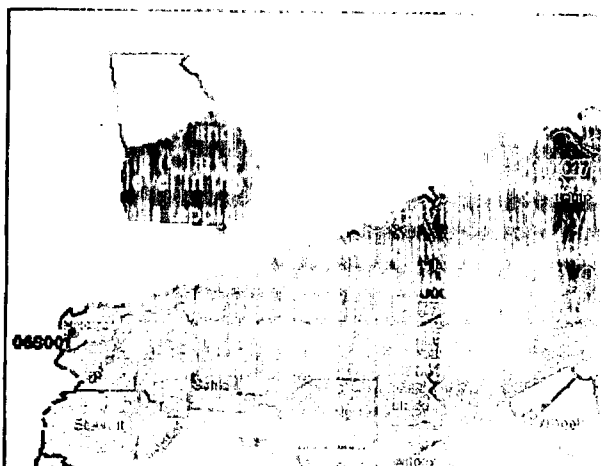
The water level in the Dublin-Midville aquifer system was monitored in 1994 at 100 wells in the western Houston County and western Twiggs County area, water levels were influenced by variations in precipitation and pumping (Clarke and others, 1985a). The Dublin-Midville aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a).

Midville Aquifer System

The water level was monitored in 1994 at 100 wells in the Midville aquifer system, water levels were influenced by variations in precipitation and pumping (Clarke and others, 1985a). The Midville aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a).

Dublin-Midville Aquifer System

The water level in the Dublin-Midville aquifer system was monitored in 1994 at 100 wells in the western Houston County and western Twiggs County area, water levels were influenced by variations in precipitation and pumping (Clarke and others, 1985a). The Dublin-Midville aquifer system is a confined aquifer system that is influenced by variations in precipitation and pumping (Clarke and others, 1985a).



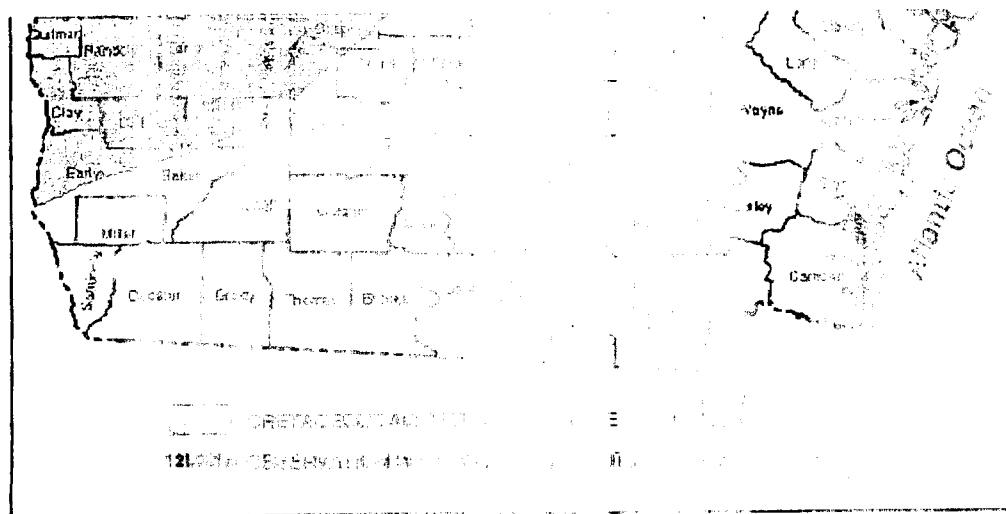


Figure 126. Location of observation wells in the unconsolidated aquifers and aquifer systems.

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Ground-Water Conditions in Georgia, 1999

USGS Open-File Report 00-515

The water levels in unconfined aquifers in the Piedmont region were measured in two wells in 1999. Data from these wells are available as PDF files accessible through the links at the top below or from [Table 3b](#). In this area, water levels in wells tapping the Piedmont aquifer are affected mainly by precipitation and local pumping (Crescentini, 1999).

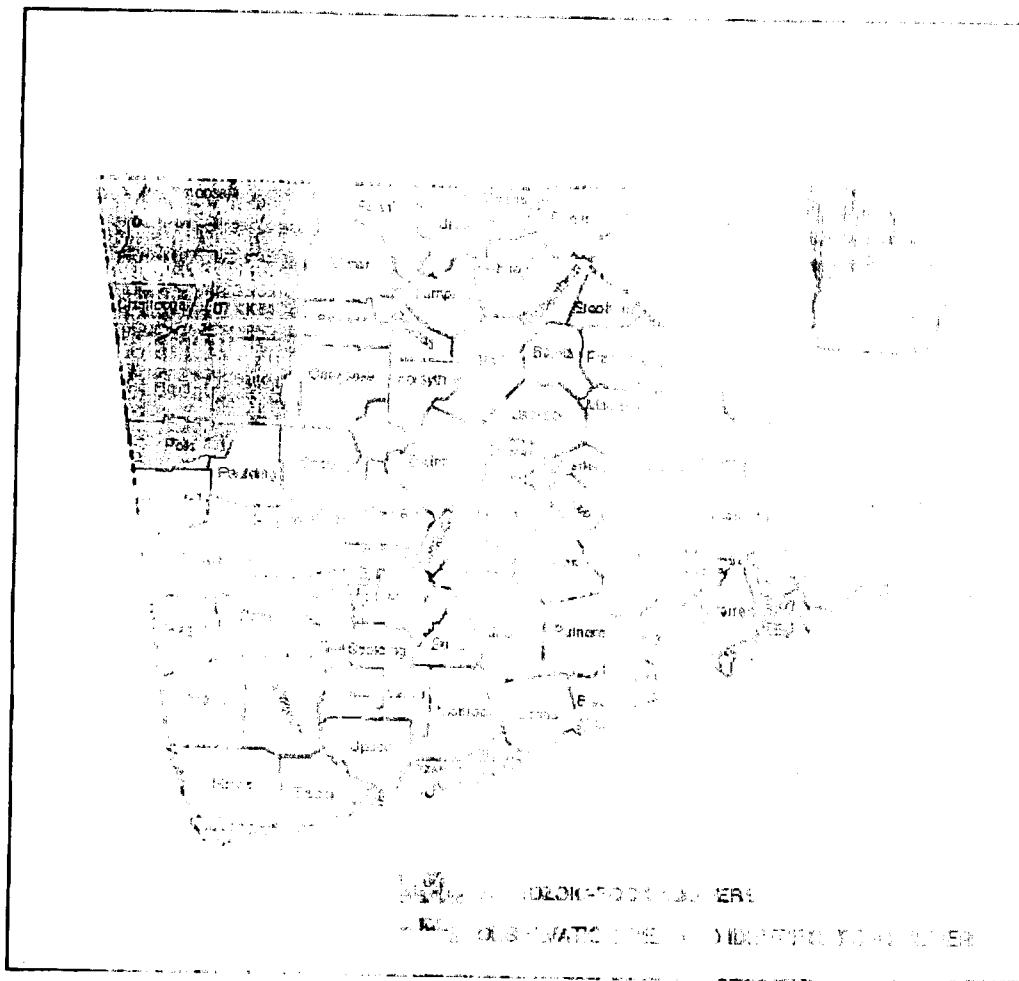


Figure 140. Location of observation wells in the Piedmont region of Georgia, 1999.

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Group 1

USGS Open-File Report 97-100

Water levels in
available at
wells tapping
pumping
by thin regis-

Quifers

Wells in 1955 indicate a low season of these wells are for water Table 3b. Water levels in Nevada are shown and locally by wells in the region. Aquifers overlain

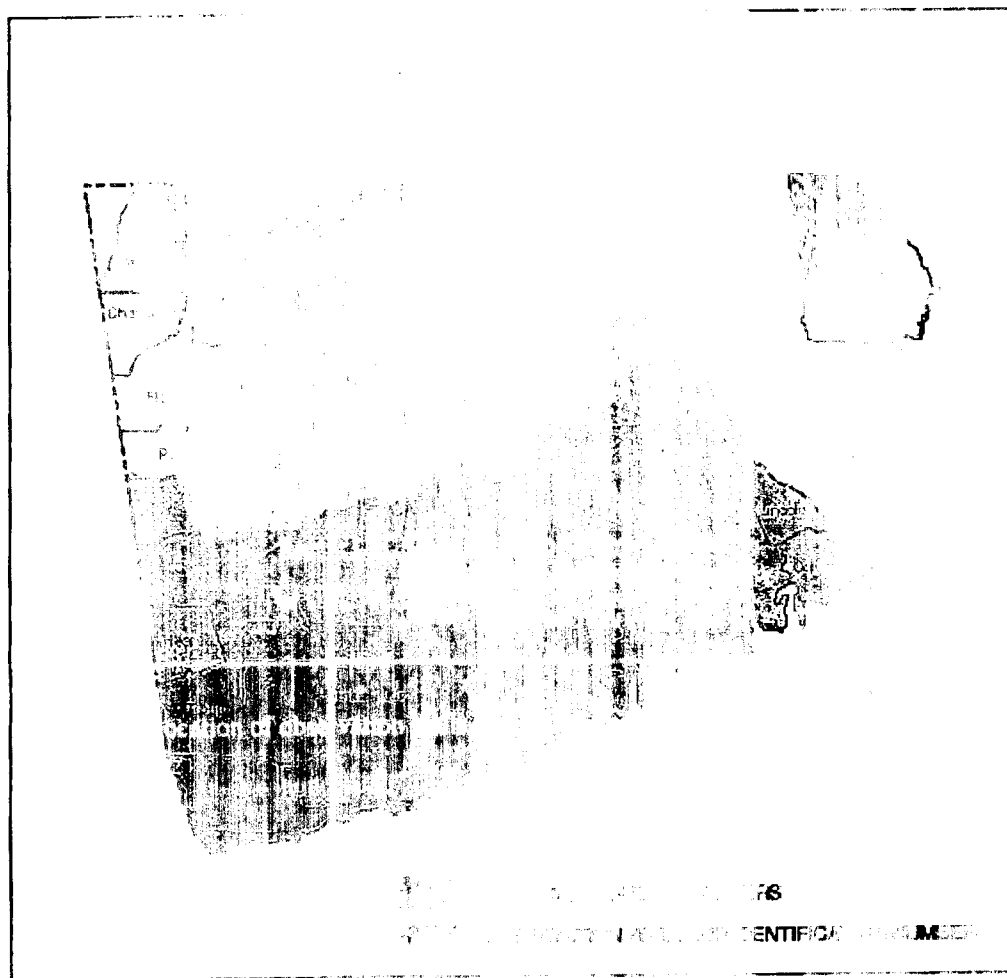


Figure 143. Location of observation wells in the carbonate block aquifer.

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Ground-Water Conditions in Georgia, 1993

USGS Open-File Report 00-515

CHLORIDE CONCENTRATIONS IN WATER FROM COASTAL PLAIN AQUIFER SYSTEM

Chloride concentration in water from the Floridan aquifer system has been monitored in coastal Georgia since the 1950's. During 1993, water samples were collected from 35 wells in the Floridan aquifer system in the Savannah and Brunswick areas and analyzed for chloride concentration. Data of chloride concentration in water for 14 of these wells are shown in table 5. Although chloride concentration may fluctuate between sample collection periods, measured points on these plots are connected by straight lines to aid visualization.

Chloride concentration in water from the upper Floridan aquifer is less than 4 milligrams per liter (mg/L) (Clark and others, 1990, p. 42) as established by the Georgia Department of Natural Resources (1990). Chloride concentration in water from the upper Floridan aquifer has been detected in the Brunswick and Milledgeville areas of the Savannah and Brunswick areas. Chloride concentration in the Lower Floridan aquifer has been measured in Milledgeville and Brunswick areas. Chloride concentration in water from the upper Floridan aquifer in the Brunswick area is less than 4 mg/L, which is within the drinking-water standard (200 mg/L) established by the U.S. Environmental Protection Agency (1991). The drinking-water standard has been established for the upper Floridan aquifer in the Brunswick area. Chloride concentration in the Brunswick area is less than 4 mg/L, which is within the drinking-water standard (200 mg/L) established by the U.S. Environmental Protection Agency (1991). The drinking-water standard has been established for the upper Floridan aquifer in the Brunswick area.

Table 5. Observations for which chloride concentrations are plotted in figure 1 (GGS, Georgia Geological Survey; USGS, U.S. Geological Survey)

County	Well	USGS well number	Well description	Open interval (feet)
Chatham	Lower Floridan	33Q198	Well 198, Savannah, bore 1	970-975
Chatham	Lower Floridan	33Q017	Well 17, Savannah, bore 1	110-145
Chatham	Lower Floridan	33Q018	Well 18, Savannah, bore 1	630-670
Chatham	Lower Floridan	33Q019	Well 19, Savannah, bore 1	606-657
Chatham	Upper Floridan	33Q020	Well 20, Savannah, bore 1	770-830
Chatham	Upper Floridan	33Q021	Well 21, Savannah, bore 1	770-830
Glynn	Lower Floridan	33Q022	Well 22, Glynn, bore 1	1,100-1,218
Glynn	Lower Floridan	33Q023	Well 23, Glynn, bore 1	1,100-1,159
Glynn	Upper Floridan, upper water-bearing zone	33H403	Well 403, Glynn, bore 1	138-182
Glynn	Upper Floridan, upper water-bearing zone	33H404	Well 404, Glynn, bore 1	540-566
Glynn	Upper Floridan, upper water-bearing zone	33H405	Well 405, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H406	Well 406, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H407	Well 407, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H408	Well 408, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H409	Well 409, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H410	Well 410, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H411	Well 411, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H412	Well 412, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H413	Well 413, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H414	Well 414, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H415	Well 415, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H416	Well 416, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H417	Well 417, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H418	Well 418, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H419	Well 419, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H420	Well 420, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H421	Well 421, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H422	Well 422, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H423	Well 423, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H424	Well 424, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H425	Well 425, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H426	Well 426, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H427	Well 427, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H428	Well 428, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H429	Well 429, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H430	Well 430, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H431	Well 431, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H432	Well 432, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H433	Well 433, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H434	Well 434, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H435	Well 435, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H436	Well 436, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H437	Well 437, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H438	Well 438, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H439	Well 439, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H440	Well 440, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H441	Well 441, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H442	Well 442, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H443	Well 443, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H444	Well 444, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H445	Well 445, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H446	Well 446, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H447	Well 447, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H448	Well 448, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H449	Well 449, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H450	Well 450, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H451	Well 451, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H452	Well 452, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H453	Well 453, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H454	Well 454, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H455	Well 455, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H456	Well 456, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H457	Well 457, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H458	Well 458, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H459	Well 459, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H460	Well 460, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H461	Well 461, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H462	Well 462, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H463	Well 463, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H464	Well 464, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H465	Well 465, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H466	Well 466, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H467	Well 467, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H468	Well 468, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H469	Well 469, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H470	Well 470, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H471	Well 471, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H472	Well 472, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H473	Well 473, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H474	Well 474, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H475	Well 475, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H476	Well 476, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H477	Well 477, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H478	Well 478, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H479	Well 479, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H480	Well 480, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H481	Well 481, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H482	Well 482, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H483	Well 483, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H484	Well 484, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H485	Well 485, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H486	Well 486, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H487	Well 487, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H488	Well 488, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H489	Well 489, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H490	Well 490, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H491	Well 491, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H492	Well 492, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H493	Well 493, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H494	Well 494, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H495	Well 495, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H496	Well 496, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H497	Well 497, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H498	Well 498, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H499	Well 499, Glynn, bore 1	470-500
Glynn	Upper Floridan, upper water-bearing zone	33H500	Well 500, Glynn, bore 1	470-500



Ground-Water Chloride in Orange, 1999

USGS Open-File Report 00-115

Ground-Water Chloride in Orange, 1999

Orange, Florida

During 1999, thirteen wells were pumped and sampled in Orange County, Florida. The results are summarized below. From these wells, the chloride concentration in the ground water was found to increase with depth. The chloride concentration is changing appreciably with time.

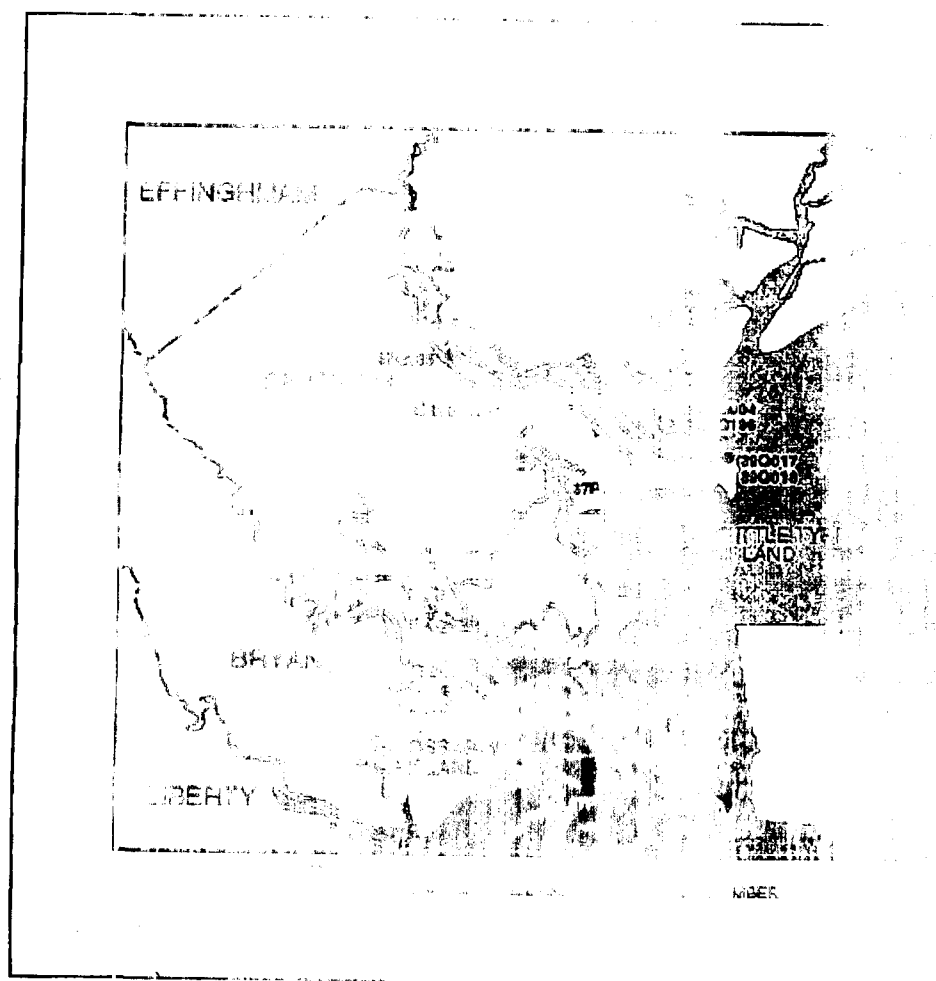
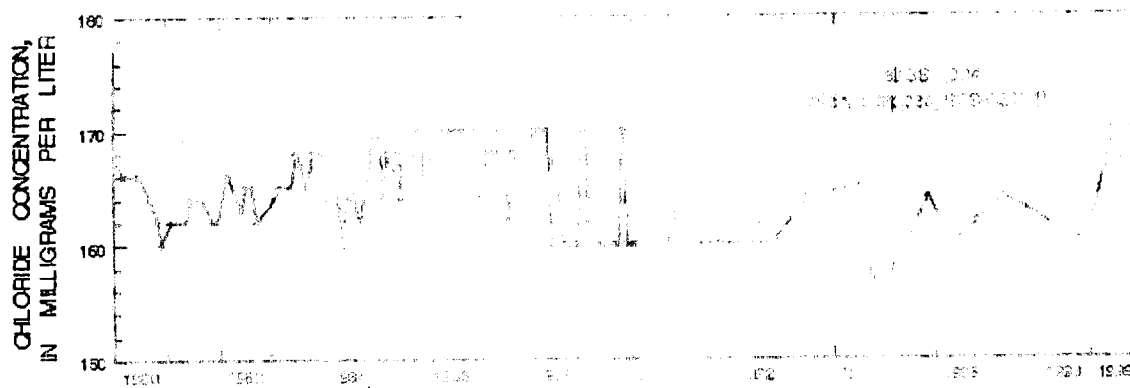
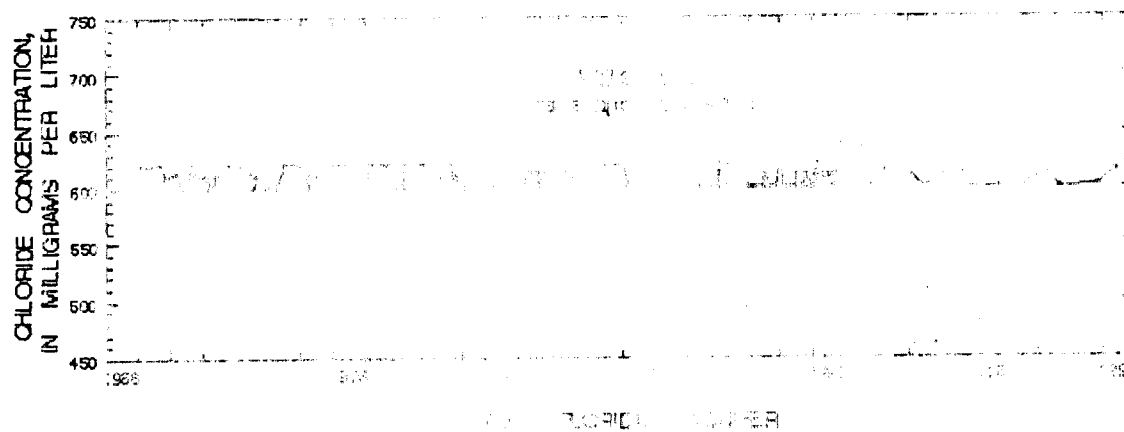
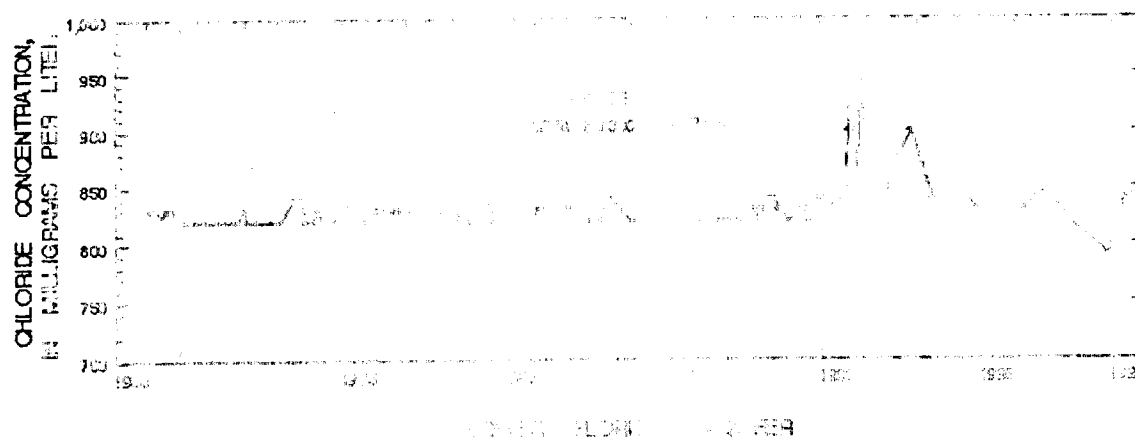
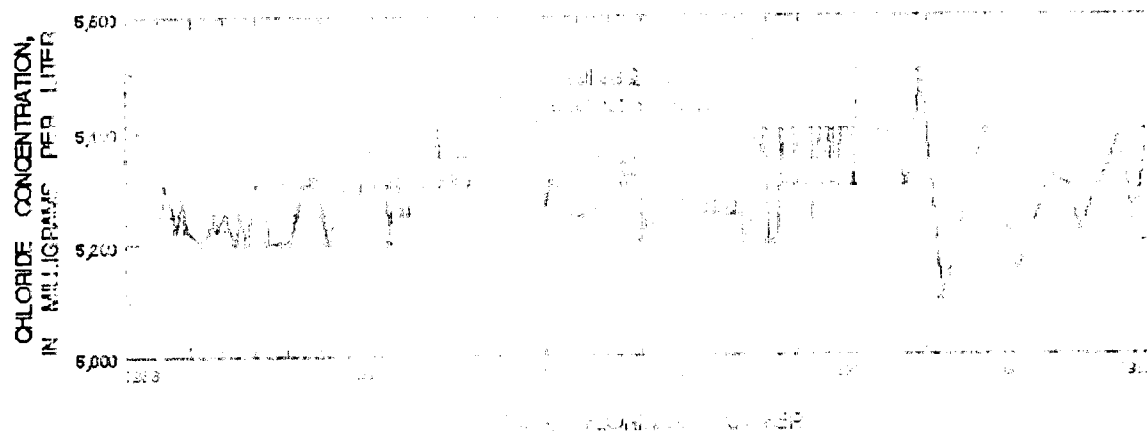


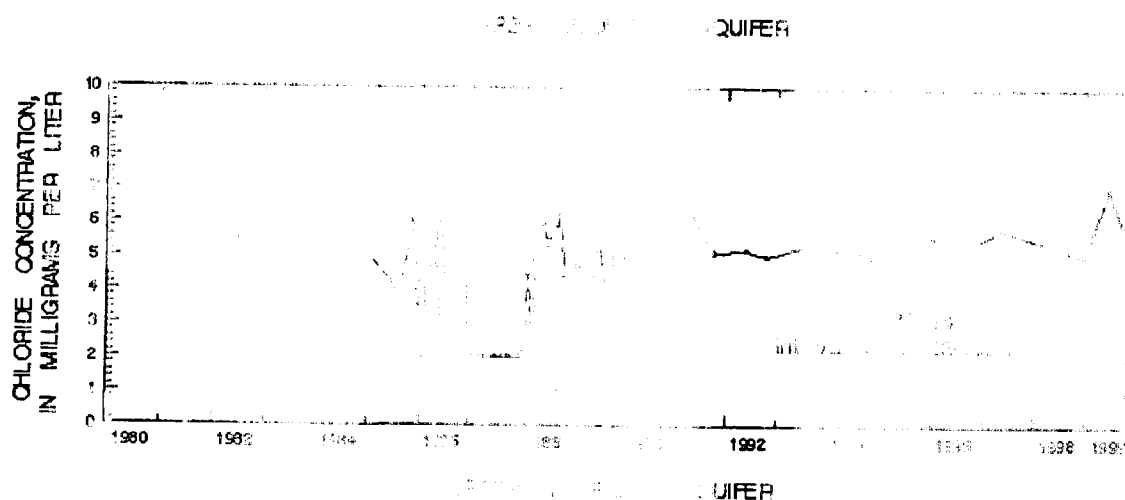
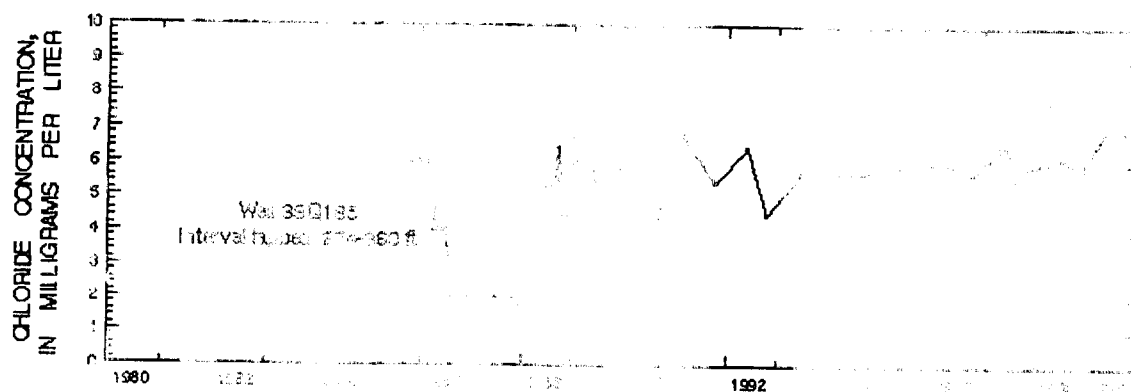
Figure 151. Location of chlorochemicals in
Chloride concentration in water in 1999

Florida
er in t

Chloride concentration in water in 1999



Chloride concentration in water and soil is higher in the *S. quiquera* than in the *S. litoralis* (Table 1).



Next



Groundwater in the Brunswick Area, 1999

USGS

Changes in Water from the Floridan Aquifer System

Braswell et al.

Since publication of the previous report (Braswell et al., 1989), the water level in the Upper Floridan aquifer (Figure 1) has declined, and this has allowed saltwater to migrate upward into the Upper Floridan aquifer. This saltwater migration is evident in the Upper Floridan aquifer of the Lowcountry region (Braswell et al., 1989, p. D51). Chloride concentrations in the Upper Floridan aquifer are greater than 2,000 mg/L.

In the Lowcountry region, 71 wells were sampled and analyzed for chloride analysis. The water chloride concentrations in the Upper Floridan aquifer tapping wells in the Lowcountry region are shown below.

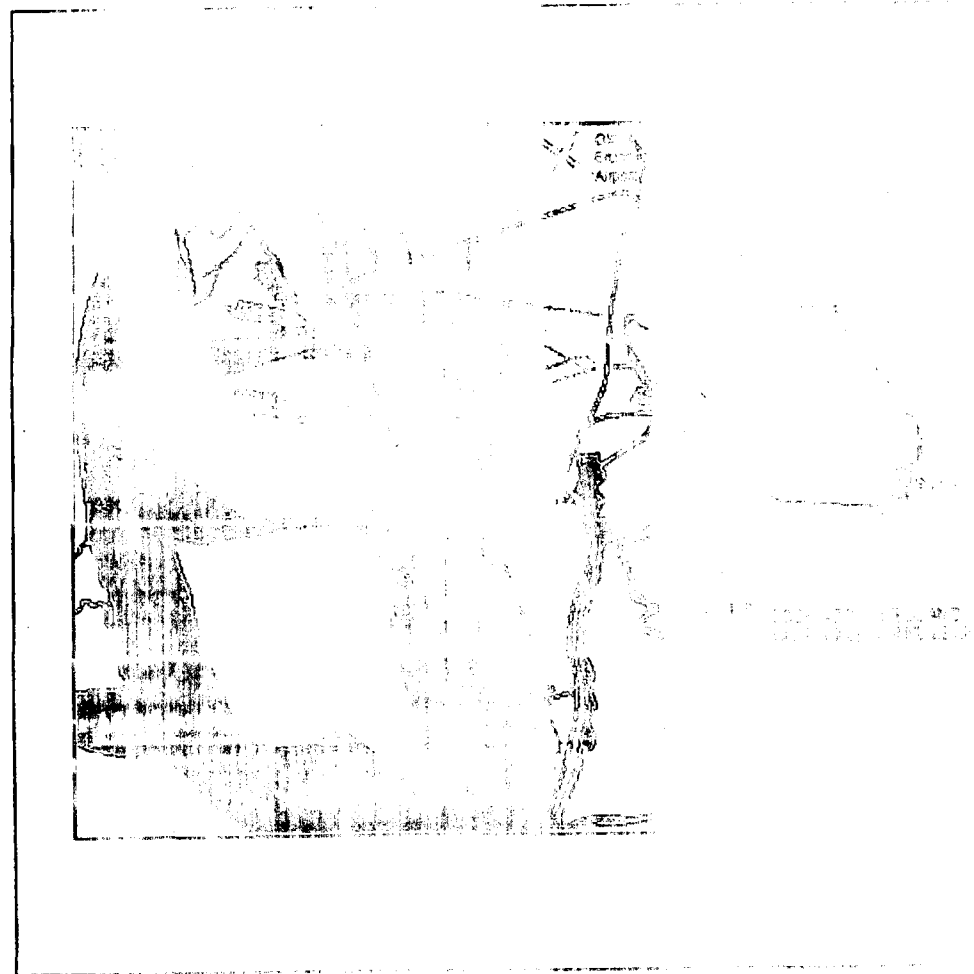
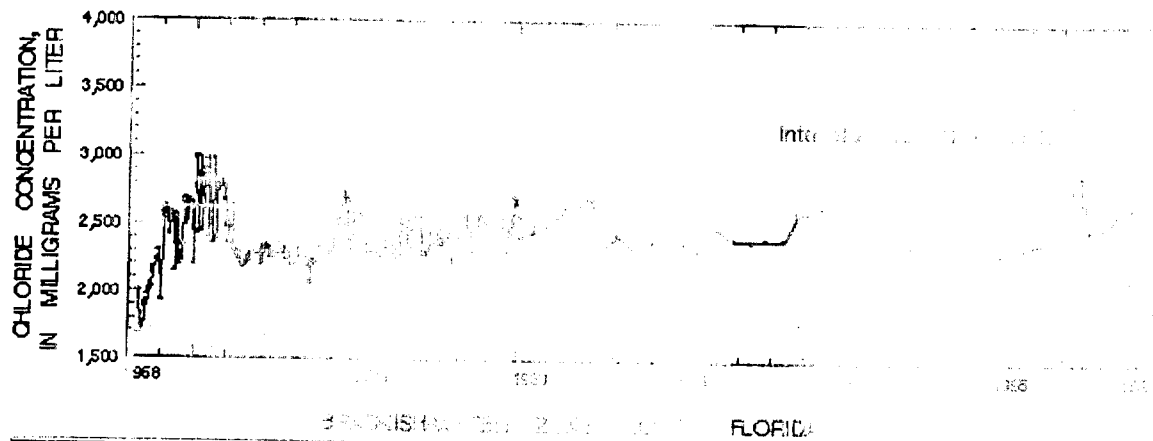
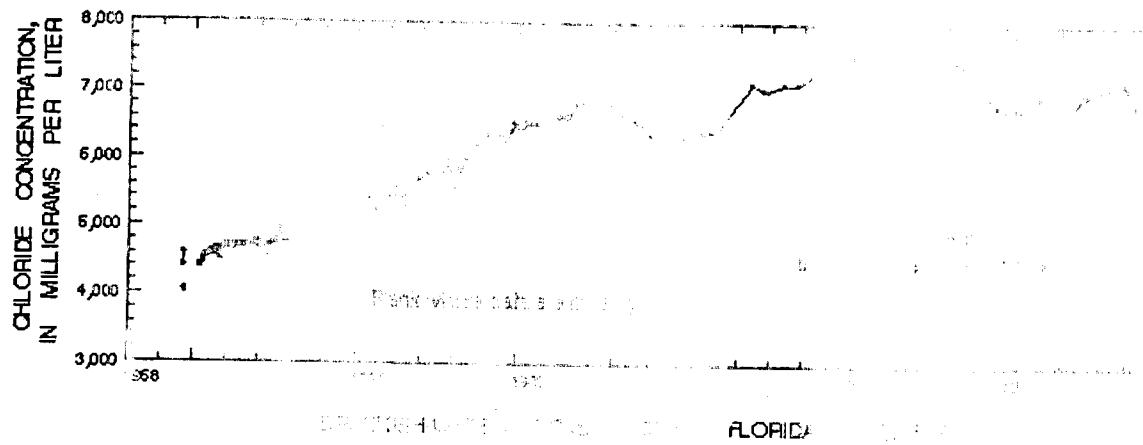
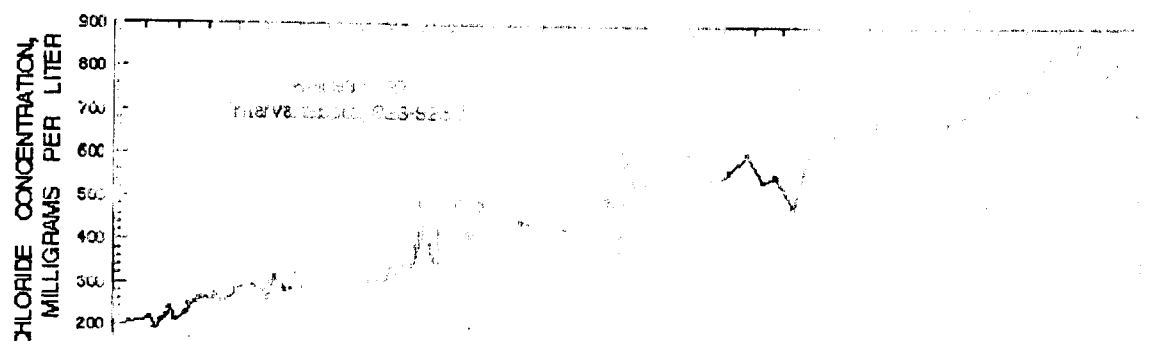
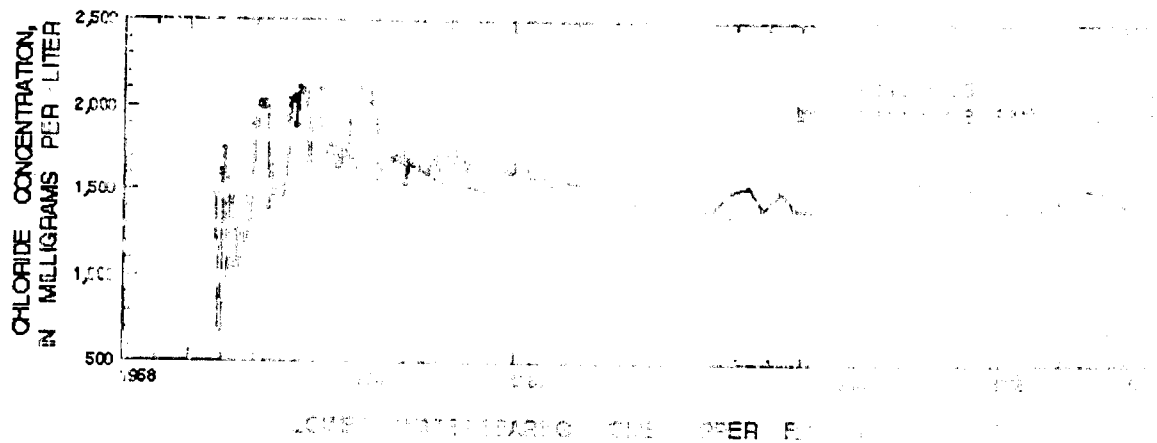
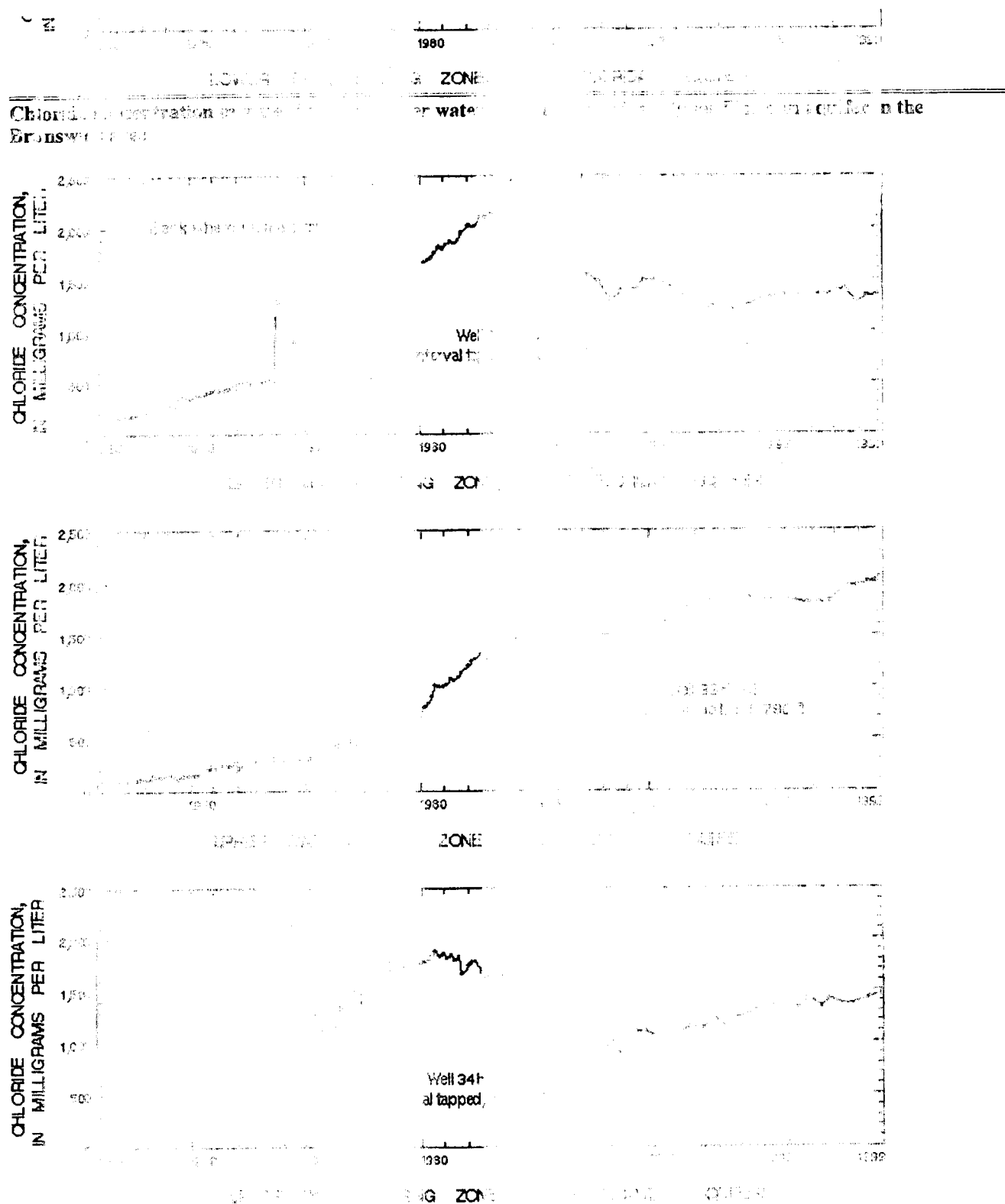


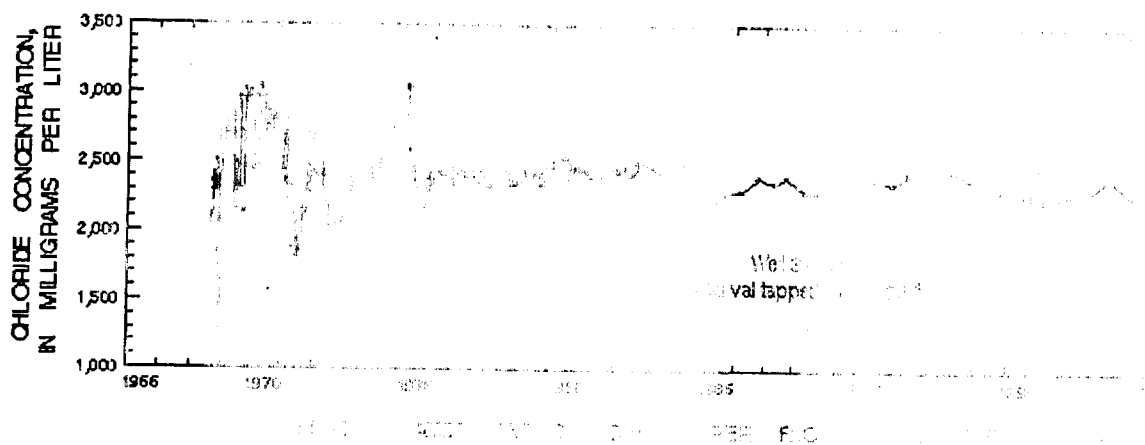
Figure 1C. Changes in water from the Floridan aquifer system, Brunswick area, 1999. Chloride concentrations in the Upper Floridan aquifer tapping wells in the Brunswick area.



Chloride concentration in water from the ... zone of the Brunswick area







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Recent USGS publications on Georgia ... Georgia Water ...
The USGS ... publications ...



Georgia: National Water-Resources Inventory, 1999

USGS Open-File Report 99-100

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Back to Ground-

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Wildlife Fisheries Management

Fishing is the most popular recreational activity in Georgia. The State Department of Natural Resources manages the warmwater streams and rivers of the state, which are the responsibility of the Fisheries Division. The Division is responsible for the recreational activities and the management of the streams through license fees, user taxes, and other means.

The Division is responsible for the management of the streams and rivers of the state, which are the responsibility of the Fisheries Division. The Division is responsible for the recreational activities and the management of the streams through license fees, user taxes, and other means.

For more information, contact the Fisheries Division at (770) 918-6418.

DNR -- Wildlife
Fisheries Management
2070 U.S. Hwy. 303
Social Circle, GA 30081
(770) 918-6418

Reservoir Information
South Georgia River
Search for New

Public Waters Management
Fish Kill Investigation
Aquatic Education
Aquatic Plant Control
Hatchery Production
Warmwater Fish Production
Trout Production
Public Fishing Areas
Fisheries Resources
Facility Construction
Technical Assistance
Report Fish Kills
Note Tagged Fish
Freshwater Fish
Angler Award Program
Catching a State Record
Recreation on Saltwater
Offices/Hatcheries

Weekly Fishing Report

Fisheries Management

Description: The purpose of this project is to develop a web-based checklist and/or improve existing checklists to assess the health of a reservoir fish assemblage. The project will include the development of a checklist, the development of a web-based assessment tool, and the development of a web-based database. The project will also include the development of a web-based database to store the results of the assessments.

Tasks: The tasks for this project are as follows:

- 1. Develop a checklist to assess the health of a reservoir fish assemblage.
- 2. Develop a web-based assessment tool to assess the health of a reservoir fish assemblage.
- 3. Develop a web-based database to store the results of the assessments.

Activities: The activities for this project are as follows:

- 1. Develop a checklist to assess the health of a reservoir fish assemblage.
- 2. Develop a web-based assessment tool to assess the health of a reservoir fish assemblage.
- 3. Develop a web-based database to store the results of the assessments.

Keywords: child sexual abuse; disclosure; social support

over 200,000 people in the United States. The Federal Protection Administration, which is part of the Federal Protection Division, is currently evaluating the effectiveness of its assistance in flood control activities. This Division, to which the Federal Protection bases. In the future, the Federal Protection Division will be able to provide flood control activities. All of these activities will help to reduce the damage caused by flood control activities.

Abstract

1. The first step in the process of the
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The first of these is the *margin of safety*, which is the difference between the actual and the expected sales. It is a measure of the risk of failure. The second is the *margin of contribution*, which is the difference between the actual and the expected contribution. It is a measure of the risk of loss. The third is the *margin of profit*, which is the difference between the actual and the expected profit. It is a measure of the risk of loss.

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the 1990s, the number of fishers has declined and the number of fish traps has increased. The number of fish traps has increased from 1,000 in 1990 to 1,500 in 2000. The number of fish traps has increased from 1,000 in 1990 to 1,500 in 2000. The number of fish traps has increased from 1,000 in 1990 to 1,500 in 2000.

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X-EB's are also

A *Chlamydia trachomatis* is the most common bacterial sexually transmitted infection (STI) in the United States. It is a leading cause of pelvic inflammatory disease (PID) and is the leading cause of blindness in newborns. *C. trachomatis* is also the leading cause of infertility in women. The Centers for Disease Control and Prevention (CDC) estimates that approximately 3 million new cases of *C. trachomatis* occur each year in the United States. The CDC also estimates that approximately 1 million women become infertile each year as a result of *C. trachomatis* infection. The CDC also estimates that approximately 1 million newborns become blind each year as a result of *C. trachomatis* infection. The CDC also estimates that approximately 1 million women become infertile each year as a result of *C. trachomatis* infection.

It has been suggested that the use of the term "aquatic" may be inappropriate for the purpose of this study.

Over the past several years, the Department of the Interior has been working to protect and restore the health of our rivers and streams and the plants and animals that depend on them. This includes:

14-05644

Expenditure 23

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

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1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

[illegible][illegible][illegible]



PROVISIONAL DATA SUBJECT TO REVISION

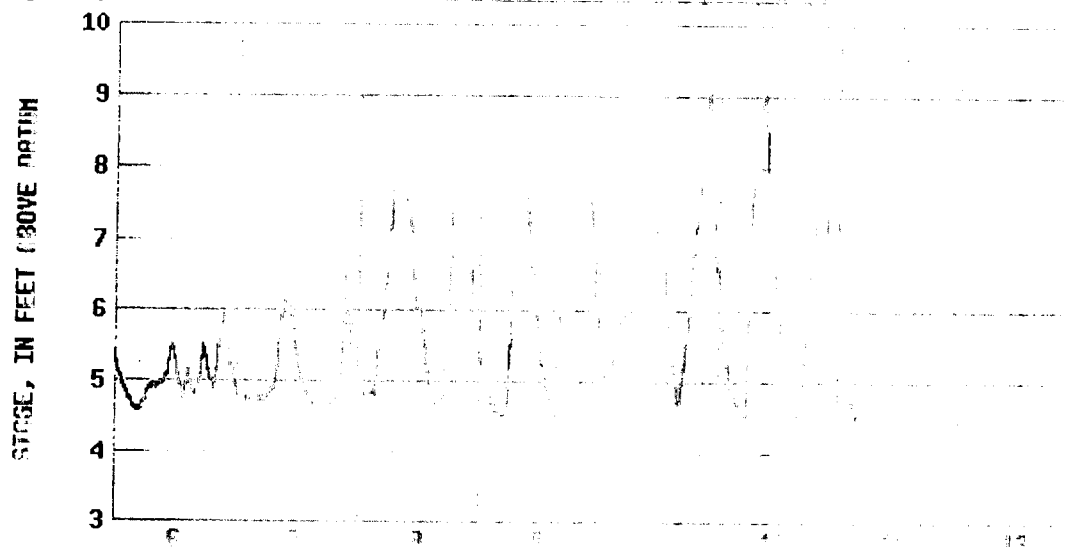
02341500-- Chattahoochee River at Columbus, GA

Current Conditions

Flow (cfs)

--

Stage -- updated for 01/12/01 1001 -- data load has not been quality checked



Daily Mean Flow (cfs) for 01/12/01 1001 -- data load has not been quality checked

Latest

01/12/01

Percent

flows for 01/12 have been greater than the value shown

• Data used in graph

Station Description

02341500 CHATTAHOOCHEE RIVER AT COLUMBUS, GA

LOCATION.--

County, Ala. Hydrologic Unit 02010000 Left bank downstream side of Central

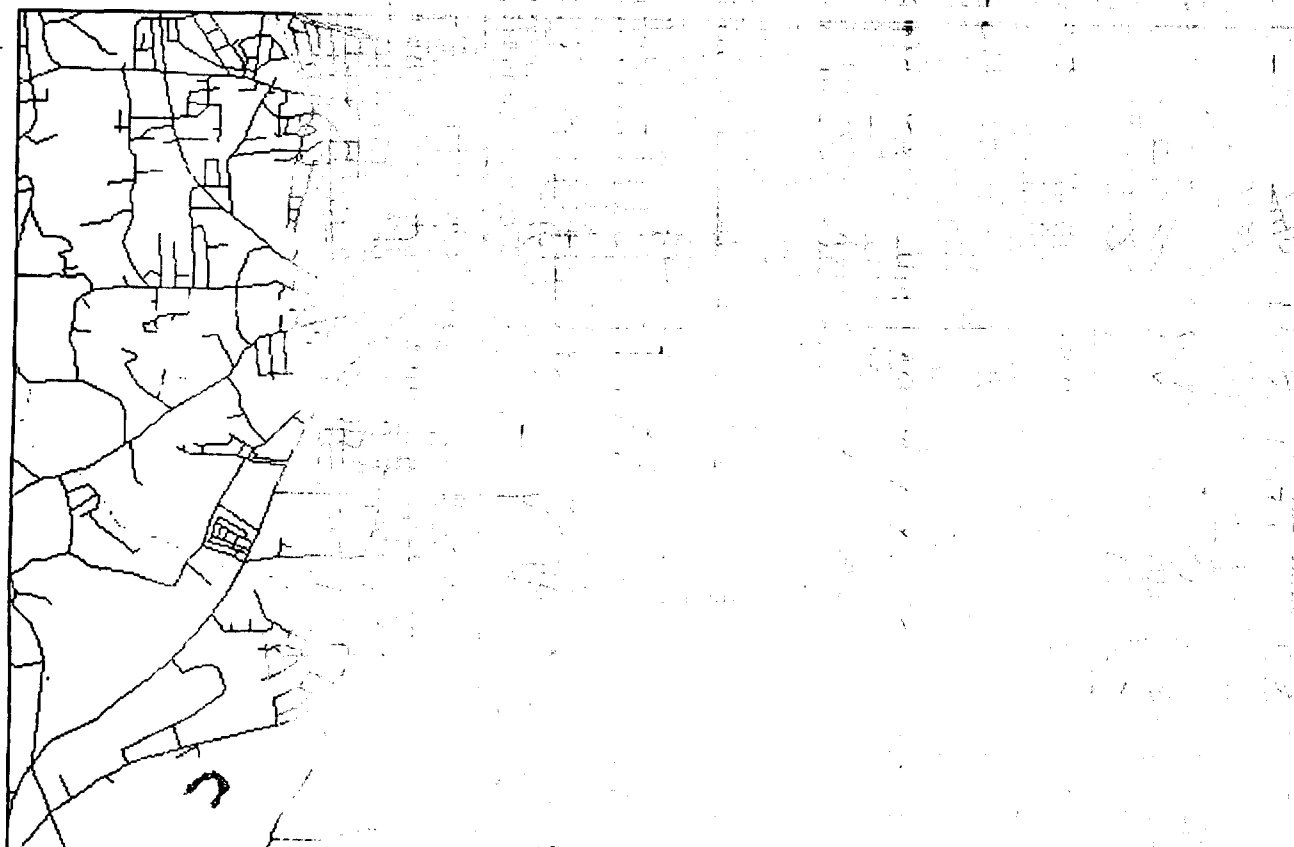
[illegible]

History The first recorded use of the word "history" in English was in the 14th century, derived from the Latin word "historia," which in turn came from the Greek word "historia," meaning "inquiry" or "knowledge acquired by investigation."

Rem: *...the*

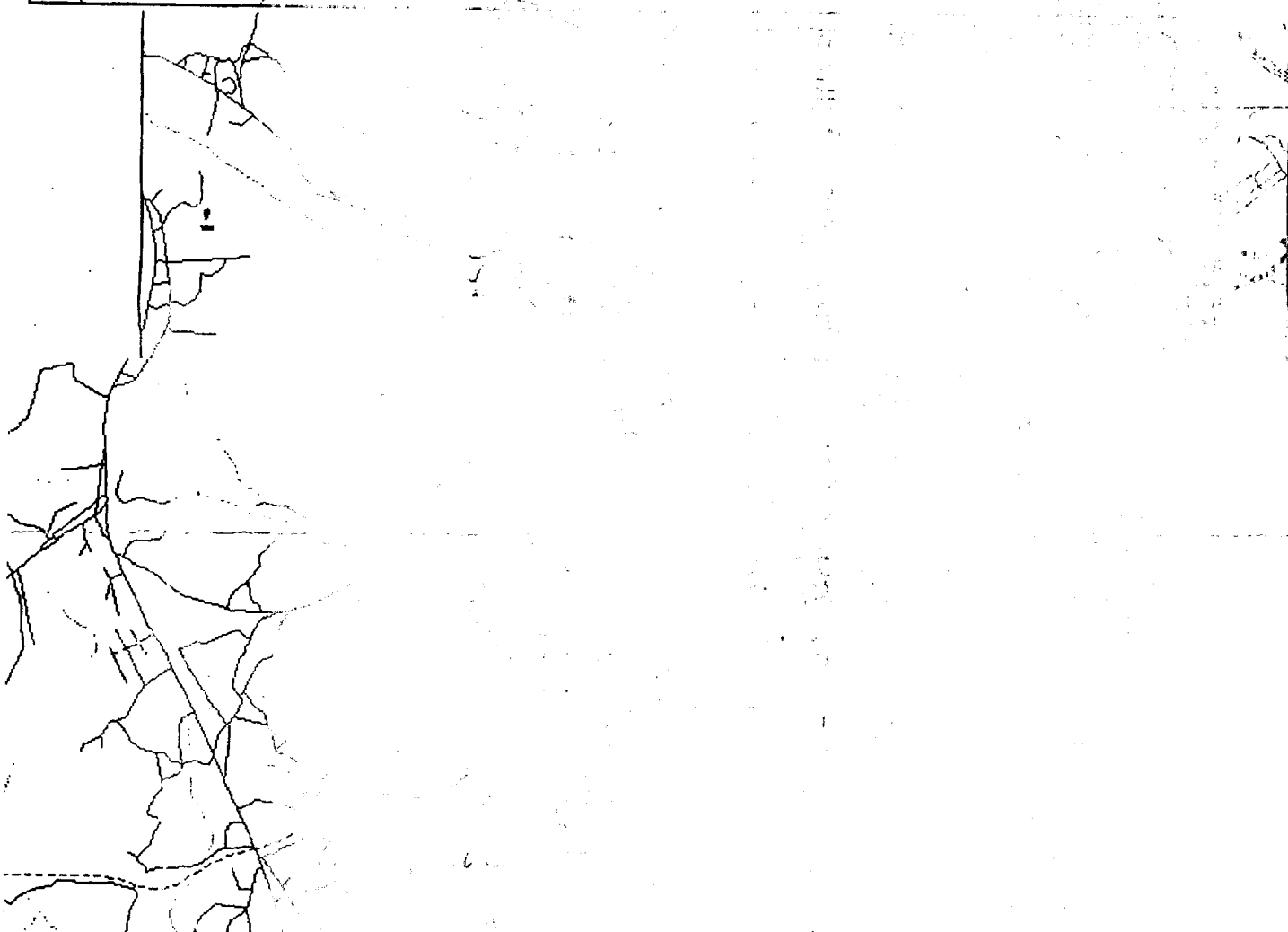
rt_www 0.037

Wetland Data Provided



- 1UB
- 2UB
- 2US
- EM1
- FO1
- FO3
- SS1
- UB
- US
- R2UB
- Upland
- No Data Available
- Streams
- Roads
- Railroad
- Rates
- Counties

- ☐ PFO1
- ☐ PFO3
- ☐ PFO4
- ☐ PSS1
- ☒ PUB
- ☐ PUS
- ☒ R2UB
- ☐ R2US
- ☐ Upland
- ☐ No Data



- [illegible]

COLUMBIA UNIVERSITY

- E. ...
- US• E. ...
- E. ...
- E. ...
- US• E. ...
- GA• E. ...
- GA• E. ...
- GA• E. ...
- E. ...
- US• E. ...

Nature

- N ...

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Please see ...

...

2007-04-21

[illegible]

CLARK, JAMES P. Co., Clerk

CONFIDENTIAL

APPENDIX

1940

THIS COPY IS THE PROPERTY OF THE

340-202-261

06/02/77

Subject: Navy's position in international law re: capture of aircraft carrier

[illegible]

2500 100 32

(c) Section 1033(c)(1)(B) shall be amended to read:

cc: (x) Fine

State ID:

City: COLUMBIA

State: GA

Report Development

☒ 1. **Exempt** from the requirements of the Act because the information is:

SITE: _____
BREAK: 1.8
OTHER: vol. 1

☒ **Yes**, I have a question about this form.

☐ 1b. []

2. Further _____

22. _____

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

Worst case scenario

Signature: _____

Date: 05/17/2001

15
North
< 1/8
0.105 mi.
557 ft.

ASHLAND CHEMICAL CO
716 6TH ST
COLUMBUS, GA 31901

CERC-NFRAP 1000276794
RCRA NonGen / NLR GAD059558601
FINDS
RAATS

Relative:
Lower

CERC-NFRAP:
Site ID: 0401506
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

Actual:
263 ft.

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID: 4752013.00000
Person ID: 4000275.00000

Contact Sequence ID: 4777142.00000
Person ID: 13002429.00000

Contact Sequence ID: 4822426.00000
Person ID: 4272610.00000

CERCLIS-NFRAP Site Alias Name(s):

Alias Name: ASHLAND CHEMICAL CO
Alias Address: Not reported
MUSCOGEE, GA

Program Priority:

Description: RCRA Deferral Audit
Description: RCRA Deferral - Further Superfund Assessment

CERCLIS-NFRAP Assessment History:

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ASHLAND CHEMICAL CO (Continued)

1000276794

Action: DISCOVERY
Date Started: / /
Date Completed: 08/01/80
Priority Level: Not reported

Action: PRELIMINARY ASSESSMENT
Date Started: / /
Date Completed: 07/01/84
Priority Level: Deferred to RCRA (Subtitle C)

Action: ARCHIVE SITE
Date Started: / /
Date Completed: 05/17/01
Priority Level: Not reported

Action: SITE REASSESSMENT
Date Started: / /
Date Completed: 05/17/01
Priority Level: NFRAP-Site does not qualify for the NPL based on existing information

RCRA NonGen : NLR

Date form received by agency: 08/18/1980
Facility name: ASHLAND CHEMICAL CO
Facility address: 718 6TH ST
COLUMBUS, GA 31901
EPA ID: GAD050558601
Mailing address: PO BOX 1456
COLUMBUS, GA 31902
Contact: DAVID ANDERSON
Contact address: PO BOX 1456
COLUMBUS, GA 31902
Contact country: US
Contact telephone: (614) 889-3215
Contact email: Not reported
EPA Region: 04
Classification: Non-Generator
Description: Handler Non-Generators do not presently generate hazardous waste

Owner/Operator Summary

Owner/operator name: Not reported
Owner/operator address: OWNERSTREET
WASHINGTON, DC 22009
Owner/operator country: Not reported
Owner/operator telephone: (404) 555-1212
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: OPERNAME
Owner/operator address: OPERSTREET
OPERCITY, WY 22009
Owner/operator country: Not reported
Owner/operator telephone: (404) 555-1212
Legal status: Private
Owner/Operator Type: Operator

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ASHLAND CHEMICAL CO (Continued)

1000276794

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
Used oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

Waste code: D000
Waste name: Not Defined

Waste code: D001

Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSLEY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE

Waste code: D002

Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Waste code: D003

Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BE WASTE GUNPOWDER.

Waste code: F002

Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE

Map ID
Direction
Distance
Elevation

MAP FINDINGS

ASHLAND CHEMICAL CO (Continued)

1000276794

OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F003
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: P022
Waste name: CARBON DISULFIDE

Waste code: P029
Waste name: COPPER CYANIDE

Waste code: P053
Waste name: Not Defined

Waste code: P090
Waste name: Not Defined

Waste code: U001
Waste name: ACETALDEHYDE (I)

Waste code: U002
Waste name: ACETONE (I)

Waste code: U004
Waste name: ACETOPHENONE

Waste code: U012
Waste name: ANILINE (I,T)

Waste code: U019
Waste name: BENZENE (I,T)

Waste code: U028
Waste name: 1,2-BENZENEDICARBOXYLIC ACID, BIS(2-ETHYLHEXYL) ESTER

Waste code: U031
Waste name: 1-BUTANOL (I)

Databases) EDR ID Number
EPA ID Number

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ASHLAND CHEMICAL CO (Continued)

1000276794

Waste code:	U037
Waste name:	BENZENE, CHLORO-
Waste code:	U044
Waste name:	CHLOROFORM
Waste code:	U054
Waste name:	Not Defined
Waste code:	U055
Waste name:	BENZENE, (1-METHYLETHYL)- (I)
Waste code:	U056
Waste name:	BENZENE, HEXAHYDRO- (I)
Waste code:	U057
Waste name:	CYCLOHEXANONE (I)
Waste code:	U069
Waste name:	1,2-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER
Waste code:	U070
Waste name:	BENZENE, 1,2-DICHLORO-
Waste code:	U071
Waste name:	BENZENE, 1,3-DICHLORO-
Waste code:	U072
Waste name:	BENZENE, 1,4-DICHLORO-
Waste code:	U088
Waste name:	1,2-BENZENEDICARBOXYLIC ACID, DIETHYL ESTER
Waste code:	U092
Waste name:	DIMETHYLAMINE (I)
Waste code:	U102
Waste name:	1,2-BENZENEDICARBOXYLIC ACID, DIMETHYL ESTER
Waste code:	U103
Waste name:	DIMETHYL SULFATE
Waste code:	U107
Waste name:	1,2-BENZENEDICARBOXYLIC ACID, DIOCTYL ESTER
Waste code:	U108
Waste name:	1,4-DIETHYLENEOXIDE
Waste code:	U110
Waste name:	DIPROPYLAMINE (I)
Waste code:	U112
Waste name:	ACETIC ACID ETHYL ESTER (I)
Waste code:	U117
Waste name:	ETHANE, 1,1'-OXYBIS-(I)

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ASHLAND CHEMICAL CO (Continued)

1000276794

Waste code:	U122
Waste name:	FORMALDEHYDE
Waste code:	U123
Waste name:	FORMIC ACID (C.T.)
Waste code:	U125
Waste name:	2-FURANCARBOXALDEHYDE (I)
Waste code:	U134
Waste name:	HYDROFLUORIC ACID (C.T.)
Waste code:	U140
Waste name:	ISOBUTYL ALCOHOL (I.T.)
Waste code:	U147
Waste name:	2,5-FURANDIONE
Waste code:	U154
Waste name:	METHANOL (I)
Waste code:	U159
Waste name:	2-BUTANONE (I,T)
Waste code:	U160
Waste name:	2-BUTANONE, PEROXIDE (R,T)
Waste code:	U165
Waste name:	NAPHTHALENE
Waste code:	U171
Waste name:	2-NITROPROPANE (I,T)
Waste code:	U189
Waste name:	PHOSPHORUS SULFIDE (R)
Waste code:	U190
Waste name:	1,3-ISOBENZOFURANDIONE
Waste code:	U194
Waste name:	1-PROPANAMINE (I,T)
Waste code:	U210
Waste name:	ETHENE, TETRACHLORO-
Waste code:	U211
Waste name:	CARBON TETRACHLORIDE
Waste code:	U213
Waste name:	FURAN, TETRAHYDRO-(I)
Waste code:	U219
Waste name:	THIOUREA
Waste code:	U220
Waste name:	BENZENE, METHYL-

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

ASHLAND CHEMICAL CO (Continued)

1000276794

Waste code:	U122
Waste name:	FORMALDEHYDE
Waste code:	U123
Waste name:	FORMIC ACID (C,T)
Waste code:	U125
Waste name:	2-FURANCARBOXALDEHYDE (I)
Waste code:	U134
Waste name:	HYDROFLUORIC ACID (C,T)
Waste code:	U140
Waste name:	ISOBUTYL ALCOHOL (I,T)
Waste code:	U147
Waste name:	2,5-FURANDIONE
Waste code:	U154
Waste name:	METHANOL (I)
Waste code:	U159
Waste name:	2-BUTANONE (I,T)
Waste code:	U160
Waste name:	2-BUTANONE PEROXIDE (R,T)
Waste code:	U165
Waste name:	NAPHTHALENE
Waste code:	U171
Waste name:	2-NITROPROPANE (I,T)
Waste code:	U189
Waste name:	PHOSPHORUS SULFIDE (R)
Waste code:	U190
Waste name:	1,3-ISOBENZOFURANDIONE
Waste code:	U194
Waste name:	1-PROPANAMINE (I,T)
Waste code:	U210
Waste name:	ETHENE, TETRACHLORO-
Waste code:	U211
Waste name:	CARBON TETRACHLORIDE
Waste code:	U213
Waste name:	FURAN, TETRAHYDRO-(I)
Waste code:	U219
Waste name:	THIOUREA
Waste code:	U220
Waste name:	BENZENE, METHYL-

15
North
< 1/8
0.105 mi.
557 ft.

ASHLAND CHEMICAL CO
716 6TH ST
COLUMBUS, GA 31901

CERC-NFRAP 1000276794
RCRA NonGen / NLR GAD059558601
FINDS
RAATS

Relative: CERC-NFRAP:
Lower Site ID: 0401506
Federal Facility: Not a Federal Facility
Actual: NPL Status: Not on the NPL
263 ft. Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

CERCLIS-NFRAP Site Contact Details:

Contact Sequence ID: 4752013.00000
Person ID: 4000275.00000

Contact Sequence ID: 4777142.00000
Person ID: 13002428.00000

Contact Sequence ID: 4822426.00000
Person ID: 4272610.00000

CERCLIS-NFRAP Site Alias Name(s):

Alias Name: ASHLAND CHEMICAL CO
Alias Address: Not reported
MUSCOGEE, GA

Program Priority:

Description: RCRA Deferral Audit

Description: RCRA Deferral - Further Superfund Assessment

CERCLIS-NFRAP Assessment History: